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Paper Chemistry Institute Meets At Appleton

More Than One Hundred Chief Executives of Pulp and Paper Companies Discuss Accomplishments of Scientific Research and Problems — Visitors Taken On Tour of Inspection of the Institute When the Sessions Open.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 7, 1937—Accomplishments of scientific research and problems of the paper industry were discussed by more than 100 chief executives of pulp and paper companies throughout the United States at a two-day session at the Institute of Paper Chemistry, Appleton, Wis., Friday and Saturday, June 4 and 5.

The visitors were taken on a tour of inspection of the Institute in small parties when the sessions opened. Exhibits had been posted showing the work of the institution during the last eight years. The equipment was inspected, principally that added recently.

A luncheon was held Friday noon at the North Shore Country Club at which members of the staff gave addresses. D. C. Everest, vice-president of the board of trustees, who is vice-president and general manager of the Marathon Paper Mills Company, Rothschild, Wis., presided.

Dr. Otto Kress, technical director, presented a resume of the more important projects undertaken, and discussed typical research projects and their application to the paper industry. Dr. Harry F. Lewis, dean, told of the search conducted annually among colleges and universities all over the country for the small number of students admitted each year, who possess the necessary qualifications and will make the paper industry their life work. He mentioned the keen competition with other institutions and other industries to obtain these same graduates. The field is narrowed down to approximately 100 who have been investigated, and the enrollment is selected from these. Three of the students, T. Richard Probst, Fred Hanson and A. Loy Bixler, were presented by Dr. Lewis and told of the work they had been doing in preparing papers for degrees.

"Fundamental Research at the Institute" was the subject presented by Dr. B. W. Rowland, research associate. He described the recently developed partnership between science and industry, and the advantages of conducting research in academic surroundings, where the investigator knows his serious labors will not be abruptly terminated. "The entire history of scientific method and its accomplishments demonstrates the importance of long sustained effort combined with a financial outlay beyond the scope of all excepting a very few individual laboratories," he said. "The academic program at the Institute affords a happy solution to this difficult problem in fundamental research."

The last of the staff speakers at the luncheon was Westbrook Steele, executive director, who explained the growth of the Institute during the last years, the development of its facilities, and the details of further plans for cooperation between the Institute and its membership.

L. A. Hawkins, manager of the research laboratories of General Electric Company, Schenectady, N. Y., spoke at the banquet Friday evening at the North Shore Country Club. He divided research in industry into two fields, intensive or engineering, and extensive or fundamental.

Illustrating intensive research, he recalled the development of ductile tungsten wire for the filaments of incandescent lamps after four years of work by Coolidge in the General Electric laboratory, and explained that in this case the goal was in sight from the beginning.

On extensive or fundamental research, Mr. Hawkins referred to the discovery of electro-magnetic induction by Faraday, the result, not of a desire to place some particular product before the public, but of efforts to find new knowledge. He also recalled the work of Irving Langmuir, General Electric scientist, who started by investigating the blackening in incandescent lamps and whose subsequent discoveries, with at no time a definite application in mind, led to far reaching developments such as the gas filled lamp, the progress of wireless, the invention of the atomic hydrogen welding torch, and other progressive steps.

Work of the Institute was lauded by Mr. Hawkins, who said more fundamental research is needed in university and industrial laboratories. There is no more hopeful place for solution of economic problems, labor discontent and unemployment, he said.

At the opening of the dinner, Ernst Mahler, vice-president of the Kimberly-Clark Corporation, Neenah, Wis., and president of the Institute board of trustees, welcomed the executives. He introduced Dr. Thomas N. Barrows, president of Lawrence College

(Continued on page 41)

Rag Content Paper Group Meets In Chicago

Paper Trading Shows Specific Signs of Reaching Long Expected Summer Slump — Paper Salesmen's Golf Tournaments — Paper and Twine Club to Meet In Lake Wawasee — Whitaker Paper Adopts Sales Clinic.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 5, 1937—Several important meetings are being held in Chicago this week as the windup of sessions prior to the vacation season. On June 2 the Executive Committee of the Writing Paper Manufacturers Association, Rag Content Paper Group, met at the Blackstone Hotel with the membership of the Writing Paper Manufacturers Association, Rag Content Group, meeting the morning of June 3. Rag Content purchasing agents and mill executives met in an afternoon conference at the Blackstone during the same day. Emmett Naylor, secretary of the Writing Paper Group, is in charge of the various sessions. A number of Chicago executives also attended the meetings of the Executive Committee and Board of Governors of the American Paper and Pulp Association which was held at the North Shore Golf Club, Neenah, Wis., on June 3. Among those passing through Chicago on their way to this meeting were Charles Boyce, secretary of APPA and Dr. E. O. Merchant.

Paper Business Conditions

The Chicago paper market shows specific signs of reaching the long expected summer slump which, in some quarters, is reported as slightly more far reaching than expected. Markets are all comparatively quiet with the exception of groundwood specialties and krafts where demand is a bit more active. Chicago commentators are also of the belief that no further price boosts are in the wind until the late summer and early fall when prices are expected to rise substantially in virtually all lines. At the present time mills are reported running at about full speed with no back log to indicate further strengthening for the immediate future. Machine repairs, building up of stocks and other factors are expected to contribute a more normal pace of production. These conditions are rather generally reported by firms in sulphite, book, cover bond, ledger and kindred lines.

Paper Salesmen's Golf Tournament

The Midwest Division of the Salesmen's Association of the Paper Industry canceled its May 31 meeting because of the holiday but plans to resume weekly sessions on June 7 at which time further plans will be announced concerning the second of the series of golf tournaments to be held on Friday, June 18, at the Westmoreland Country Club. Ralph Burnett, American Writing Paper Company, is in charge of these popular monthly sessions which attract an average of around sixty-five members and guests.

The association announces the following prize winners in the initial golf outing event held at the Sunset Ridge Country Club on May 21. Low gross, W. J. Tilden, Mead Sales Corporation; Blind Bogey, O. C. Jones, Seaman Paper Company; low net, 17 and under, Paul C. Wesco, Fox River Paper Company; low net, 18 and over, H. J. McLaughlin, Dwight Brothers; second low net, 18 and over, N. B. Thompson, Dwight Brothers; third low net, 18 handicap and over, H. M. McLaughlin, Heco Envelope Company; low net, first nine holes, W. N. Lyman, Dwight Brothers; low net, second nine, L. F. Porter, Northwest Paper Company; low putts, first nine, Henry C. Engel, Central Paper Company; low putts, second nine, H. L. Montgomery, Berkshire Paper Company. High gross foursome, J. A. Coy, A. H. Harmon, I. L. Meyers and G. J. Stack. Low net foursome, H. R. Brenton, H. M. McLaughlin, J. M. Guest and L. F. Porter. Low putt foursome, H. J. McLaughlin, Vern Fields, Spence Hiberling and Gus Carlson all of the Dwight Brothers organization.

Paper and Twine Golf Outing

A number of Chicagoans are planning to journey to Lake Wawasee next week to attend the annual meeting and golf outing of the Paper and Twine Club. It is reported that more than 150 members and guests are expected to attend including the new members which list H. C. Lawless of the Union Bag and Paper Corporation as among the recent affiliates. The outing is scheduled for June 7 and 8 with both manufacturers and merchants participating in the general sessions devoted to a discussion of ways and means to coordinate efforts and assist in the merchandising of paper, paper products and twine. During the afternoons golf tournaments will hold the spotlight. R. W. Miller, Central Ohio Paper Company, Columbus, will preside at the Monday sessions and C. J. Wittrock, Paragon Paper Company, Cincinnati, will take care of the Tuesday meeting.

Unique Paper Sales Clinic

A unique and resultful sales clinic participated in by salesmen of the Whitaker Paper Company has recently been terminated with results very satisfying, according to Jack Hillyer, general manager of the Chicago concern. The course required the salesmen to attend classes at least one night a week for the full period and the fees for the course were divided between the salesmen and the firm itself. A sales specialist served as the instructor with sales technique as the "major course."

Color Tells Universal Story

"Color Tells a Universal Story" says the Oxford Paper Company in issuing from its Chicago office and through Bermingham & Prosser and Bradner Smith & Co., Chicago distributors, a folder describing Oxford papers and Oxford Polar Superfine in particular. The advantages of color in advertising usage are presented in effectively written copy and an excellent choice of half tones.

Cliff Marvin With Bermingham

Cliff Marvin, for a number of years located in Minneapolis with the New-House Paper Company of that city is now affiliated with the Chicago offices of Bermingham & Prosser.

Montreal Newsprint Prices Score Advance

Rumors Prevail Despite Scouting of Announcement That Higher Level Than $50 Per Ton Has Been Asked for Second Half of 1938 — Col. C. H. L. Jones Elected Head of Price Bros., Succeeding Hon. G. W. Scott.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 7, 1937.—On the strength of reports, reputedly emanating from London, that there was a possibility of the announcement of a contract price for newsprint for the second half of 1938 at a higher level than $50 a ton, newsprint securities have scored further advances on the Montreal stock market. In responsible circles here the idea of Indian announcement is scouted, it being held that it would be foolish to so far anticipate developments.

It is pointed out, however, that in 1930, when the price of newsprint was considered reasonable in the circumstances then prevailing, the contract price f.o.b. New York was $62 a ton as compared with the $50 a ton level fixed for the first half of 1938.

Paper Securities Movements

From January 1, 1936, to date, nine newsprint securities listed on the stock exchanges of Montreal and Toronto have enjoyed a net market increment of $109,253,500.

Some of the more pronounced market advances have been positively sensational. Price Bros. common, at its high of 53, was selling more than 15 times the Jan. 1, 1936, price of 3½. The gain was equal to 1415%. Abitibi rose from 1¼ to 15½; a gain of 1140%; Cons. Paper from 2 to 24½, or 1125%; and St. Lawrence Corp. from 1¾ to 15, or 700%.

The following table shows the full extent of the newsprint rise, as well as the subsequent shading from the 1937 highs:

	Jan. 1 1936	Current Price	Net Market Increment
Abitibi	1¼	6½	$5,658,200
Do. 6% pfd.	6¼	62	19,446,600
Cons. Paper	2	17½	35,786,200
Donnacona "A"	5	15¼	2,598,200
Price Bros.	3½	40	15,579,300
Do. old pfd.	22½	†150	8,012,500
St. Law. Corp.	1¾	12¾	6,344,800
Do. pfd.	9	33½	5,692,000
St. L. Paper, pfd.	21	92¼	10,135,700
Total			$109,253,500

† Estimated; old stock removed from list.

Price Bros. Executive Change

The Hon. Gordon W. Scott has resigned from the presidency and the directorate of Price Bros. & Co., and has been replaced by Col. C. H. L. Jones.

H. J. Symington, K. C., has been elected a director and named chairman of the board. A. A. Aitken is appointed vice-president of the company. It is understood that Colonel Jones will also continue as president of the Mersey Paper Company.

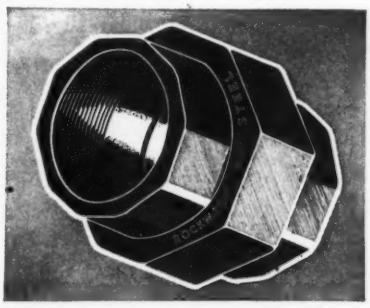
Herbert J. Symington, K.C., the new chairman of the board, is connected, either as a director or officer, with a number of important Canadian corporations. Mr. Symington is a director of the Canadian National Railways, Director of N. Bawlf Grain Company, of Federal Grain Company, of Calgary Power, International Power Company, Ottawa Valley Power Company, Porto Rico Power Company, is vice-president of Monterey Railway, Light & Power Company, vice-president of Royal Securities Corporation Limited, and is president of Porto Rico Railway, Light & Power Co.

Colonel C. H. L. Jones, O.B.E., V.D., M.E.I.C., the new president of Price Brothers, is president and managing director of the Mersey Paper Company, president of the Mersey Shipping Co., president of the Liverpool & Brooklyn Realty Co., Ltd., president of Rover Shipping Co., Ltd., of the Schooner Trawler Fishing Co. Ltd., and of the Sissiboo-Clyde Power & Pulp Co. Ltd.

New Rockwood Union

The Rockwood Sprinkler Company, of Worcester, Mass., has just placed on the market its new Dualsteel Union which was especially designed for service on pipe lines in sulphite paper plants. It has greater strength and resistance to corrosion than the unions commonly used in the past in this industry.

There are two features which paper mill maintenance engineers look for in a union. It will resist oxygen corrosion and dilute sulphuric acid even better than iron.



In strength it is superior to malleable iron and forged steel—the steel commonly used in solid steel unions in the past. These facts have been definitely proven by tests in recognized laboratories. Furthermore, the Dualsteel Union offers real resistance to wrench abuse.

New Howard Bond Distributor

The Howard Paper Company, Urbana, Ohio, makers of Howard Bond, Ledger, and Mimeograph, announce the appointment of the Newhouse Paper Company, Des Moines, Iowa, as agents for the distribution of Howard Bond.

This is in line with The Howard Paper Company's desire to extend its service to users of bond paper by making Howard Bond readily available within a short distance for speedy delivery.

The Newhouse Paper Company will carry a full stock of Howard Bond and is in a position to meet every emergency with prompt service.

Marathon Co. Signs Closed Shop Agreement

Nekoosa - Port Edwards Labor Union Applies to State Labor Relations Board for Recognition — Allis-Chalmers Mfg. Co. Employees Accept Tentative Wage Proposal — Paper Speakers Announced for Section.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 7, 1937.—Marathon Paper Mills Company last week signed a closed shop agreement with the adjustment committee of its employees, following a meeting with union officials. The agreement applies to its mills at Rothschild, Wausau and Ashland, Wis. The unions represented are the International Brotherhood of Paper Makers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers.

This was the second agreement between the company and the unions. It provides that all employees now working for the company and eligible for the union must join in thirty days. New employees must join within sixty days. It further provides for "Call time" and time and a half for overtime. Other provisions include a vacation with pay beginning January 1, 1938, and wage adjustments effective June 1, 1937.

The Nekoosa-Port Edwards Labor Union, an independent labor organization of employees of the Nekoosa-Edwards Paper Company, Nekoosa, Wis., has applied to the newly created state labor relations board of Wisconsin for recognition as a labor body. The group claims a membership of 225 out of a total of 1,050 employees. Last week the American Federation of Labor organized a local of the International Brotherhood of Paper Makers among the employees, after several mass meetings. A local of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers also has been formed. The A. F. of L. unions claim a membership of approximately 600.

Employees of the Allis-Chalmers Manufacturing Company, Milwaukee, Wis., have accepted a tentative wage proposal, the terms of which were not announced. The schedule was accepted at a mass meeting of 7,000 employees who are members of the United Auto Workers' Union. Several other provisions of a contract are also being negotiated.

Paper Speakers for Convention

Several speakers are scheduled for the pulp and paper section of the Wisconsin River Valley Safety Conference, to be held June 10 at Merrill, Wis. Clayton Braatz of the Marathon Paper Mills Company will be the chairman. C. K. Boyer, manager of the Interlake Pulp and Paper Company division of the Consolidated Water Power and Paper Company at Appleton, Wis., will deliver an address. A panel discussion will follow, with J. J. Pizak of the Consolidated company as chairman. Those taking part are: Oscar Duus, Tomahawk Kraft Paper Company; C. M. Green, Mosinee Paper Mills Company; F. H. Rosebush, Nekoosa-Edwards Paper Company; G. H. Suhs, Ward Paper Company; John McPherson, Wausau Paper Mills; S. E. Tomczak, Flambeau Paper Company, and Clayton Braatz, Marathon Paper Mills Company.

Speakers on the general program in the morning will be Dr. Merritt La Count Jones of Wausau, Wis., and Dr. Hart E. Fisher, Chicago. An executive session is to be held at noon at which Voyta Wrabetz, chairman of the newly created Wisconsin labor relations board, will speak on the effect of the social security act on industry.

A mammoth parade is to be held late in the afternoon, followed by a closing banquet at which W. H. Cameron, managing director of the National Safety Council, will speak on "Safety, an International Problem." R. G. Knutson of Stevens Point, is the conference chairman.

J. T. Wing Arrives At Green Bay

The three-masted schooner J. T. Wing, owned by J. T. Wing & Co., Detroit, Mich., arrived at Green Bay, Wis., last week with a cargo of pulpwood destined for Wisconsin mills. The 140-foot vessel was manned by six youths under command of George A. Fisher, who were experiencing the romance of sailing under canvas. The cargo is the first of several to be brought to the Green Bay docks from Canadian pulpwood sources.

Smoke Nuisance to be Abated

Wisconsin Tissue Mills, Menasha, Wis., has been ordered by the city council to abate a smoke nuisance. Residents in the neighborhood have registered complaints. The company made recent installations in its boilers and smokestack to minimize the condition, but has been ordered to take further steps.

In a hearing in the probate court at Oshkosh, Wis., attorneys have been ordered to file briefs on a petition for interpretation of the will of Mrs. Mary Felker Snell. The estate amounts to $278,000, and provides a $4,000 annuity for her husband, Arthur B. Snell, to be paid from dividends and interest on 415 shares of stock of Gilbert Paper Company, Menasha, Wis. The stock is appraised at $207,000. A $50,000 trust fund is to be set up for a sister, and the heirs question whether it is to come from income derived from the stock, or whether some of the stock is to be sold to accomplish the purpose. A. C. Gilbert, president of the Gilbert Paper Company, is one of the executors of the estate.

Mrs. Oberweiser Seriously Injured

Mrs. E. A. Oberweiser, wife of the president of the Whiting-Plover Paper Company, Stevens Point, Wis., was seriously injured in an automobile accident near Cheyenne, Wyoming, last week. Her niece, Miss Beatrice Heisen of Menasha, Wis., died of injuries received in the accident. The two women had spent the winter months at Phoenix, Ariz., and were returning to Stevens Point. Their car skidded on a wet pavement. Mrs. Oberweiser suffered internal injuries, a fractured right arm, and a fractured left knee. Mr. Oberweiser chartered a plane from Milwaukee to reach his wife after hearing of the accident.

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General Price Advances for Fine Papers

Writing and Text Papers Highered $10 Per Ton and Ordinary Paper $7 Per Ton — Pulp Quotations Lower At Present Although It is Predicted That They Will Be Up Again Within Next Few Days—Forest Fires Out.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, ONT., June 7, 1937.—Effective at the beginning of June, a general advance occurred in prices of fine papers. Writing and text papers are advanced about $10 per ton, while ordinary paper is up about $7 a ton. This advance, following a similar increase in March this year and in December, 1936, has raised prices to a point about 8 per cent. above a year ago, and the general level is now close to the pre-depression high. Chief influences in the series of advances, it is stated, are the increasing labor costs, and the threatened scarcity of sulphite resulting from the expanding demand for that product for consumption in other industries. The net effect on earnings of companies producing these grades, it is understood, will be important.

In the meantime the paper market in both the fine and coarse paper sections is strong and a good demand exists for most lines. The coarse paper market is in better shape than it has been for a long while, due to a general tendency toward co-operation between mills and distributors. While the era of carload lots has not yet arrived there is a disposition on the part of consumers and wholesalers to buy more freely and some stocking-up is taking place. Board plants, for the most part, are busy, reflecting better conditions in the paper box industry. Book paper mills throughout the province are uniformly active and some of them have some nice business booked ahead. The paper converting trade is not as busy as it might be but there has been some improvment in the situation of late. Manufacturers of light weight papers report an active market with a good call for paper towels, crepes, toilets and similar lines. Ontario mills turning out blanks, blottings and manilas report a good demand for their products.

The pulp market continues strong and while prices were down a bit this week it was predicted that they would be up again within the next few days. During the past season demand for all grades of pulp has shot skyward and those companies engaged solely in the manufacture of pulp, or which have surplus pulp for sale, stand to make big earnings this year. Pulp operators have had exceptionally keen demand for their products and the price has been advanced on several occasions with the current level higher than it has been for many years. High-grade bleached sulphite, used largely in the manufacture of artificial silk, is now selling at a minimum of $71 a ton in Canada, with American consumers paying as high as $90 in the United States. There is no floating supply and this grade of pulp is being taken as quickly as it can be produced. Unbleached sulphite is currently selling at $59 a ton if it can be had. This type of pulp is used in newsprint and the finer grades of paper. It is seldom the sole product of a paper mill, being manufactured by paper makers, who now use all the bleached sulphite they can lay their hands on to meet the demand for paper.

Groundwood pulp, primarily for use in newsprint and other low grades of paper, has shared in the improved market, selling for $35 a ton in Canada and $37.50 a ton for export to the United States. Considering that contract newsprint is now selling for $42.50 a ton delivered in New York or Chicago, it is apparent that the pulp makers are doing appreciably better than the newsprint manufacturers.

Lake Sulphite Company, which has been formed to take advantage of the strong market for sulphite pulp, is rushing construction work and plans to bring its plant at Red Rock, Ont., near Nipigon, into operation next year. The initial output will be 200 tons daily with plans for further expansion if the market warrants.

U. S. Firm Given Pulp Cheap

It was charged in Toronto this week that in the Little Lake mining district the Ontario Government, which claims to desire to create employment in this country, gave to the largest pulp print manufacturers in America the right to purchase this huge pulp area without consulting the Legislature. The agreement, it was stated, by critics of Premier Hepburn, was signed behind closed doors at a lower price than a Canadian firm could purchase it.

Forest Fires Drenched

Forest fires, which have been in progress in Northern Ontario's pulp lands, were pretty well extinguished by welcome rains this week, causing residents and owners of pulpwood limits to breathe easier again. With hundreds of forest fire fighters on the job in the Sudbury and other areas most of the fires have been brought under control and while the losses have not yet been estimated it is known that considerable pulpwood timber has been destroyed. In the Matachewan area, in the northern section of the Temegamie Forestry Division, an hour of steady rain this week improved the forest fire situation and while the settlements have not been harmed some miles of pulpwood and timber have been burned over in this and other sections.

Gummed Products Renews Lease

The Gummed Products Company, Troy, Ohio, makers of Sterling "Tread" Gummed Tape, Trojan Sealing Tape, Box Tape and Gummed Paper, has recently renewed its Eastern warehouse and office lease for a period of three years. It is located in the Port of Authority Commerce Building, New York City.

Large warehouse stocks are maintained here to facilitate speed and promptness in servicing New York's metropolitan area, as well as Philadelphia and New England.

This branch office and warehouse is under the direction of C. W. Van Deusen, in charge of Sterling "Tread" Gummed Tape and Trojan Tape, and Gummed Papers—and C. A. Simpson, who has charge of Trojan Cloth Tape Sales.

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PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

Scott Paper Co. Announces Vacation Plan

Employees With Seven or More Years Service Receive Two Weeks Leave With Pay — Freile Addresses Wrapping Paper Members Regarding Co-operation With Fine Paper Division — Spaulding Speaks on Association.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 7, 1937—The Scott Paper Company has just announced a new vacation plan for wage employees under which all those with more than one year's service will receive vacations with full pay depending on the length of time with the company.

Employees of seven or more years are entitled to a vacation of two weeks, with full pay. Those with the company three to six years are entitled to one week with full pay.

Association Work

Members of the Wrapping Paper Division of the Paper Trade Association of Philadelphia met in the Adelphia Hotel at dinner on Thursday evening, June 3 at 6 o'clock. Following the dinner, W. B. Killhour of the Quaker City Paper Company, presented Ormond Freile, president of the Philadelphia Paper Trade Association. Mr. Freile outlined the activities of the Fine Paper Division, and said that it was his desire to keep in closer touch with the Wrapping Paper Division in order that the problems of both Fine and Wrapping Divisions might be worked out to the mutual satisfaction of all concerned.

He stated that the purpose of this meeting was a general get-together that everyone might know each other better and strengthen the activities of the association, for said Mr. Freile "in unity there is strength." He further said that it is the beholden duty of everyone of the members to use every effort to maintain the high standard the Paper Trade Association of Philadelphia has established, for it is axiomatic that the success of the paper merchant is, in a measure, due to the organized effort which accrues from association activities. And, said Mr. Freile—"All too often we rest on our oars and fail to see the significant anthology of the benefits that lie ahead."

An innovation in the conduct of the division's meetings had its inception at this meeting when a member of the division was made temporary chairman. Charles Wilder, of Wilder Brothers, was made presiding chairman and he introduced the other speakers who included E. K. Lay, president of the Paper and Cordage Association of Philadelphia. Mr. Lay spoke on the advantages of association work, and urged that every effort be put forth to stimulate the membership in both Divisions of the Paper Trade Association.

Chet. Spaulding, assistant secretary of the National Paper Trade Association greeted his audience in his usual gracious fashion. Mr. Spaulding brought with him as his particular guests of the evening, several mill representatives from New York who, he said, were interested in the work which the association was doing here in Philadelphia.

Ross Fife, representing the gummed tape industries, gave assurance that the manufacturers in that particular group, would certainly at all times co-operate to the fullest extent toward better trade customs on the part of manufacturers and their dealers. Mr. Fife said he was particularly pleased to be present at this meeting and wanted to leave with them the thought that a more cordial feeling had been established in knowing them.

With Butler Smythe on hand to arrange the playing partners of the Golf Tournament of the Philadelphia Paper and Cordage Association, held at White Marsh Valley Country Club on May 28, together with Fred Hastings to check the handicaps and Arthur Sherrill as official starter, history was made so far as this association's golf tournaments were concerned.

The annual outing of this association will be held at the Manufacturer's Country Club, Oreland, Pa., on Tuesday, June 15. There will be golf, tennis, quoits, dinner, dancing and music, and a gala time is promised all those who attend.

On Wednesday of this week the Board of Governors of the Paper Trade Association of Philadelphia will have a luncheon meeting at the Down Town Club at 12:30. On Thursday of this week, there will be a general trade meeting at 12:30 in the Down Town Club.

British Buy Two Swedish Mills

[FROM OUR REGULAR CORRESPONDENT]

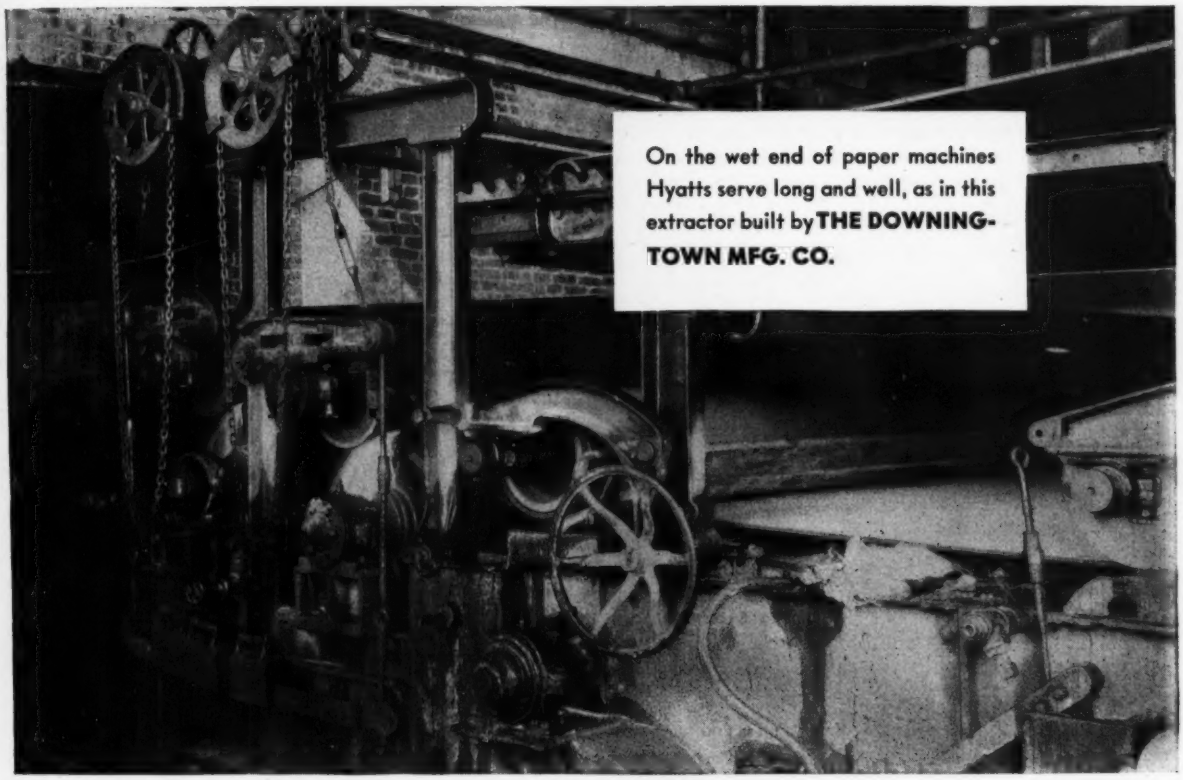
WASHINGTON, D. C., June 9, 1937—By means of a transaction described in the press as one of the largest financial deals ever concluded in the Swedish wood pulp industry, the leading British newsprint manufacturing interests have completed negotiations for the purchase of two mechanical pulp mills owned by Aktb. Scharins Soner. These two mills are located at and near Umea and have a total annual capacity of about 130,000 metric tons of wet mechanical pulp. The Swedish company arranging the sale has retained a third mill with an annual capacity of about 60,000 metric tons as well as a sawmill and wallboard factory. The latter will probably be expanded in the near future.

Lufkin May Get Paper Mill

Word comes from Dallas, Detroit and other places, some in far-away sections that a paper mill is coming to East Texas, and that Lufkin is assured of the plant, says the *Times-Herald* of Dallas, Tex.

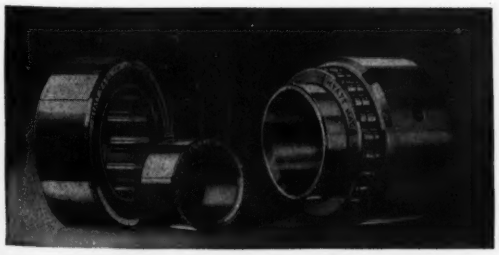
The second growth pine forest in the Lufkin area is almost without bounds and limits, and the amount of land that can be given over to second growth pine trees runs into millions of acres. The Lufkin area is not only favorable in that it has an inexhaustible supply of the raw material for a paper mill. It also has most excellent highways, motor freight lines and splendid railroad facilities for the handling of freight of all kinds.

IT'S A TOUGH LIFE



On the wet end of paper machines Hyatts serve long and well, as in this extractor built by **THE DOWNINGTOWN MFG. CO.**

...but they don't weaken!



HYATT
ROLLER BEARINGS

Under gruelling operating conditions today, excessive wear and stress is imposed, which would easily make ordinary bearings old before their time!

But Hyatt Bearings are designed to withstand these strains and shocks. And built by master craftsmen to a double standard of precision and long life—Hyatt capacity and performance give many added years of service to related parts.

That's why you will find so much operating equipment with Hyatt Roller Bearings built in. Hyatt Bearings Division, General Motors Corporation, Newark, Detroit, San Francisco. Hyatt Roller Bearing Sales Company, Chicago and Pittsburgh.

Coarse Paper Cost Finding Committee Meets

In General Discussion Consensus of Opinion Was That Market Would Remain Firm — Business In Boston Wholesale Paper Market Remains Fair —M. C. Flemings Appointed Chas. A. Esty Worcester Resident Manager.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 7, 1937.—A meeting of the Cost Finding Committee of the Wrapping Paper Merchants, considered very valuable by those present, was held Friday at the Boston Chamber of Commerce. In a general discussion of conditions, the consensus of opinion was that the market would continue firm on most staple items handled by wrapping paper merchants. A report on a Survey of Current Practices in Allowing Cash Discounts was submitted by John C. Hurd as executive secretary of the New England Paper Merchants Association. This matter is being studied further with a hope of correcting certain practices which seem more liberal than necessary.

Paper Market Fairly Active

Business in the Boston wholesale paper market as a whole continued fair during the last week. A dealer in fine papers said it was quieter, but that there were signs that it was picking up. Another, although noting that business had fallen off, said that the market was not so much in the doldrums as it was a year ago at this time. Considering the flurry early in the year, business has kept up very well. At the New England office of a large manufacturer of fine paper, it was intimated that orders had come in in larger volume during the week than the previous month on special lines, but that there was no better trend in general. At another manufacturer's office, it was stated that business was good. In fancy lines, the volume was very good. A dealer in diploma papers reported a record business. Wrapping paper was fairly active, although kraft specialties were rather quiet. Some speculative buying had previously taken place, so consumers are apparently stocked up for the present. The box board market remained quiet, although a little improvement developed.

Paper Stock Market Quiet

The paper stock market was quiet in most grades, with declines in a number of them. A dealer, noting that the trend is temporarily downward, predicts that by the middle of August there will be an improvement and that business will be better than ever in the fall. Mills are now operating on their inventories and when they are exhausted manufacturers will buy, he affirmed. Business was less active in old papers, drastic reductions in prices of mixed papers and old newspapers tending to slow up the movement. Mixed papers were quoted at varying ranges, .45 @ .47½ and .50 @ .55, with the former price on the high side at .65. Old newspapers were similarly quoted at varying ranges, .50 @ .52½ and .50 @ .55, compared with a former range of .60 @ .65. Corrugated boxes were quoted at .77½ @ .82½, against a former range of .75 @ .85. Some manufacturers bought ahead on corrugated boxes at higher prices. No. 1 books, heavy, declined to 1.10 @ 1.20 from 1.40. The price on No. 1 books, heavy, had been rather high, a condition which always brings out large quantities. Mills bought in considerable quantities and with such a large amount on hand, it was a good opportunity to bear the market.

In bagging, foreign manila rope was in less demand, with a consequent decline to 4.25 @ 4.40 from 4.25 @ 4.50 and 4.75 @ 5.00 f. o. b., Boston, the previous week. New domestic rags remained steady at the same values as before, although mills are not inclined to buy any stock for which they have no immediate use. In old domestic rags, No. 1 roofing stock went down to 1.30 @ 1.40 from 1.35 @ 1.45 and the No. 2 grade to 1.20 @ 1.30 from 1.35 @ 1.40, both f. o. b., Boston. The No. 3 grade remained steady. Roofing stock is said to be in strong hands. In foreign rags, dark cottons eased off to 1.65 @ 1.75 from 1.75 to 1.85 and old linsey garments to 2.10 @ 2.25 from 2.50 @ 2.65, f. o. b., Boston. In foreign rags the situation continues a little more favorable to buyers on this side. A dealer, however, was recently offered 200 tons of dark cottons at 2.00 by a foreign shipper, although his previous quotation was 2.25.

Paper Houses to Close

The following Bulletin of the New England Paper Merchants Association has been sent to all fine and dual paper members outside Metropolitan Boston in regard to summer closing.

"The tendency seems to be toward closing on Saturdays during the summer, among printers, engravers, paper houses, etc.

"In our own trade, this can best be done by cooperative action of local groups. The following notice has been sent to members in Metropolitan Boston:

"'A check-up of all Fine and Dual members in Metropolitan Boston shows that all are going to be closed on Saturdays from July 3 to September 4, both inclusive. One concern, which has out-of-state jobber business, will keep a skeleton force on duty for this type of business. Three houses will be closed Saturdays in June, also.'

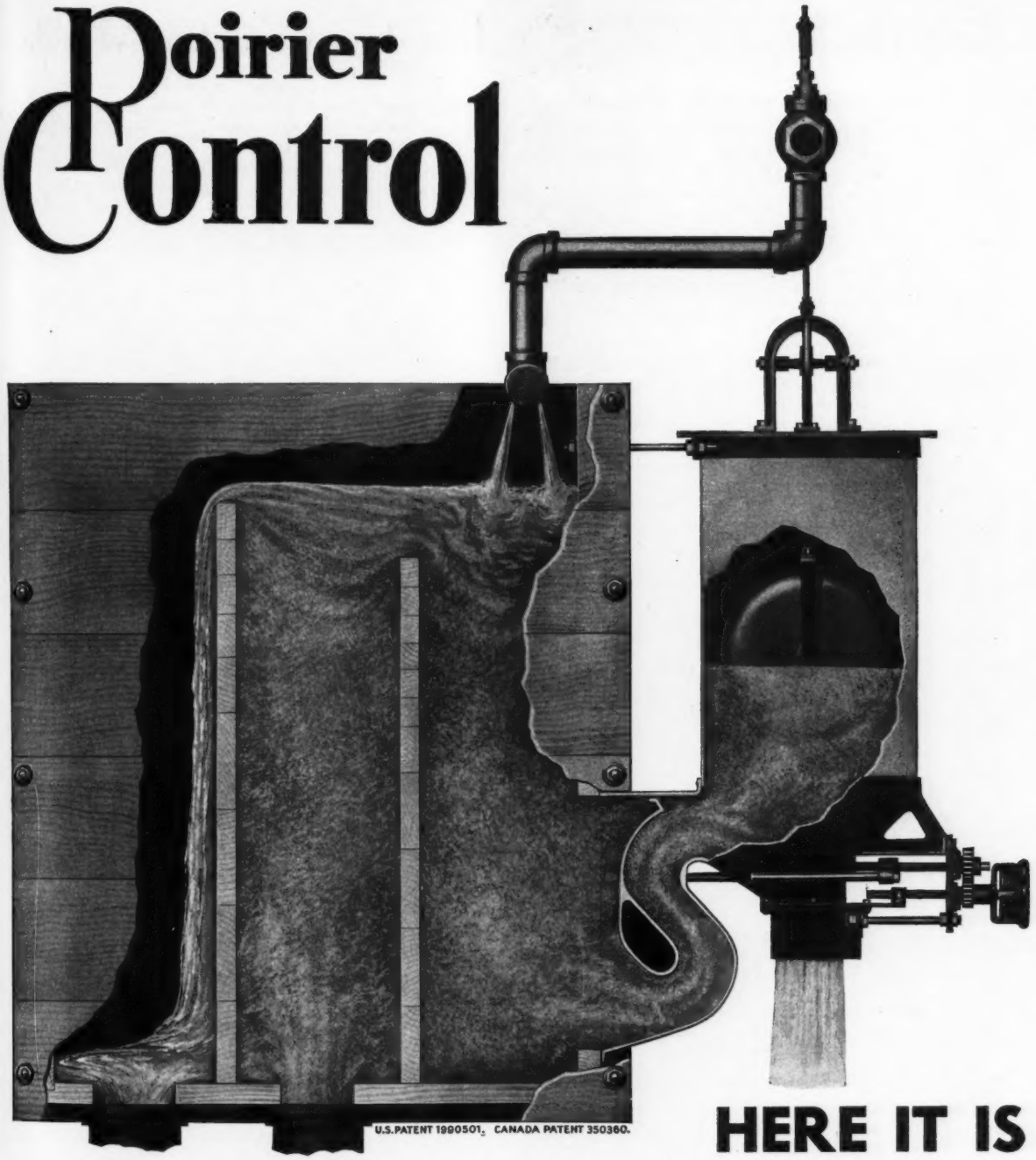
"This is quoted for your information, and with the thought that this definite action may bring about decisions in other areas."

Merton C. Flemings in New Post

Merton C. Flemings, associated with Carter, Rice & Co., Corp. since 1918, and for the last eleven years located at Syracuse, N. Y. as its upper New York state sales representative, has been appointed resident manager of the Charles A. Esty Paper Company Division, Worcester, Mass., succeeding Graham Blandy, 2nd.

Mr. Flemings is a native of Lowell, Mass. and received his early education in the schools of that city. His training in the Boston store of Carter, Rice & Co., later as an outside Boston and Providence salesman and since 1926 in the New York state territory as Carter-Rice representative has given him a well rounded experience both in the Fine and Wrapping end of the business. His reputation as a hard

Poirier Control



U.S. PATENT 1990501, CANADA PATENT 350360.

HERE IT IS

THE NEW

COMBINATION CONSISTENCY and VOLUME CONTROL

that holds basis weights and consistencies to a degree of accuracy heretofore unapproached

EXHIBITED AT SUPERINTENDENTS CONVENTION

Send for complete information to sole manufacturer

STURTEVANT MILL CO. DORCHESTER, BOSTON, MASS.

worker and his ability to make friends still further qualify him for his new position.

He will move his family to Worcester at an early date.

I. R. Canfield Succeeds Mr. Flemings

Irving R. Canfield, who has been with Carter, Rice & Co., Corp., in the Boston office, will immediately take over Mr. Flemings' duties in New York State. Mr. Canfield will make his home in Syracuse.

PERCY D. WELLS, dealer in fine papers, is to remove on July 1 to 150 High street, corner of Oliver, where he will have more space, better light, and a tiled floor. There are five large plateglass windows on High street, and four on Oliver street. Mr. Wells' present location is at 58 Pearl street.

JOHN L. MUNRO, of Munro & Church Company, dealers in box board, recently flew to California in a day to meet Mrs. Munro and their daughter, Miss Virginia Munro. He stayed four days in California, then with his wife and daughter, went to Monterey, Mexico, 1865 miles in an automobile in less than three days. He returned to Boston by airplane. Mrs. Munro and Miss Munro are coming to Boston more leisurely my motor, expecting to arrive this week.

HENRY L. GOODMAN, dealer in fancy papers, returned Tuesday from a ten days' fishing trip to Lake Kokad-Jo, Maine, with a party of fourteen. Mr. Goodman, who stayed at the Kokad-Jo Inn, had a very enjoyable time. He caught the largest fish in the party, a salmon, weighing 6¼ pounds.

A. A. WELLER, treasurer of the Mason Box Company, Attleboro Falls, Mass., well known in the box board and paper box trade of Boston and vicinity, has sailed for Europe, accompanied by Mrs. Weller, expecting to be away about six weeks.

COL. EDGAR SMALLEY, managing director of Edwin Butterworth & Co., Ltd., England, and president of the British Paper Stock Dealers Association, is expected in Boston today. He will call on the trade and make his headquarters with E. Butterworth & Co.

HOWARD L. SIMONS, JR., of the A. M. Collins Manufacturing Company, Philadelphia, called on the Boston trade last week. Mr. Simons is no stranger here, having represented the company in this territory, where he is well thought of, previously.

W. L. GOODWYN, vice-president of the Standard Paper Manufacturing Company, Richmond, Va., called on the trade last week and David P. Rhodes, of the New York office of the Waterfalls Paper Mills, whose plant is at Mechanic Falls, Me., was a recent Boston visitor.

New Baker 5-Ton Telescoping Truck

Filling a long-felt need for a high-capacity tiering truck for extremely high lifts, The Baker-Raulang Company, Cleveland, has just announced a new telescoping Hy-Lift truck of 5 tons capacity known as their Type HH-5. This truck permits tiering skids to extreme heights while retaining a nested height low enough to enter a standard box car. With this nested height of 88 inches, the maximum lift of the platform is 106 inches above the floor. The platform of the truck follows standard practice as to dimensions, being 26½ inches wide by 54 inches long by 11 inches high in the lowered position, although these dimensions may be varied to suit requirements within reasonable limits.

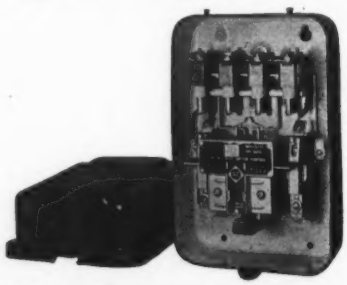
Hoisting of the platform is accomplished by two double, alloy steel roller chains each having an ultimate strength of 34,000 pounds. The hoist unit is in accordance with standard Baker practice and is fully protected against damage from interrupted lowering. The frame is fabricated of SAE 1045 steel plate arc welded and hot riveted through drilled holes reamed to size in place during assembly. The upright members are heat treated alloy steel castings in channel form.

The trailing axle is of the tandem type which is articulated and is fully compensating in both the longitudinal and transverse directions. This type of axle, in conjunction with the Baker Duplex Compensating Suspension of the power axle, permits the truck to travel over rough floors without the transmission of road shocks or twisting strains to the frame and without danger of spilling the load.

The hoist controller operates through a magnetic blow-out, mill-type contactor which takes all the arcing from the controller itself. This controller is connected to the hoisting mechanism in such a manner that it is automatically returned to neutral at the upper and lower limits of the platform travel. The travel controller is the exclusive Baker "NoPlug" (Patent Applied For) which makes careful and correct operation of the truck compulsory by preventing instantaneous reversals or starting from a dead stop in the higher speeds.

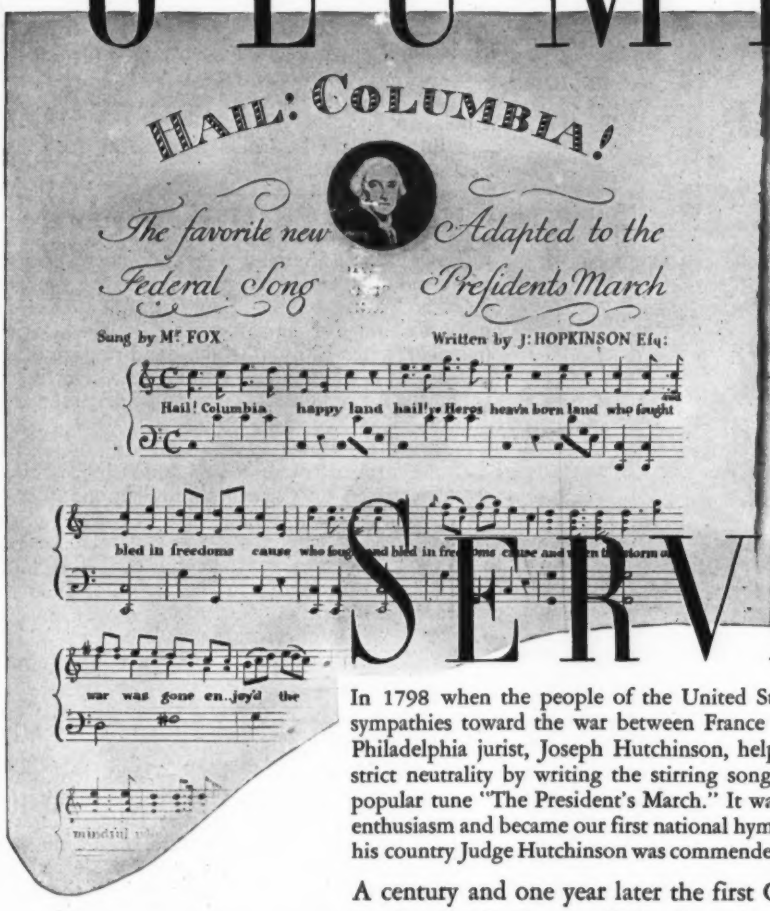
"Ruptor" Air Motor-Starter

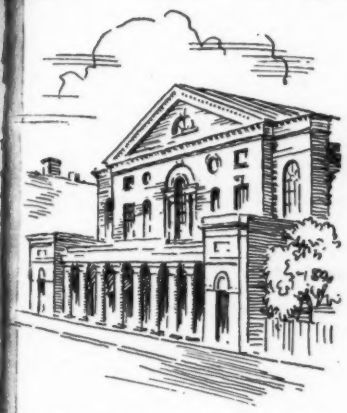
The Allis-Chalmers Manufacturing Company, Conduit Works, Boston, Mass., announces a new type of across-the-line air motor-starter, equipped with "Ruptors", known as type AP-7. The "Ruptors" are enclosing chambers which confine and depotentiate the arc formed by circuit interruption. These "arc-depotentiating chambers" greatly increase the interrupting ability of the contacts, and form an isolating barrier between contacts of opposite polarity.



Other features include: vertical make and break—Silent operation; enclosed temperature overload relays, affording positive motor protection; unit construction—pole units consisting of individual molded bases mounted on a steel chassis, thus assuring true contact alignment; large silver double break contacts—no contact dressing needed; contacts accessible and quickly renewable; pilot circuit isolated from motor circuit, permitting a separate control voltage for push-button circuit where necessary; motor starter unit arranged for flat surface mounting when applied without enclosure. The starter is furnished for 7½ hp. at 440 and 550 volts, 5 hp. at 220 volts, and 3 hp. at 110 volts.

Hail COLUMBIA SERVICE


HAIL: COLUMBIA!
The favorite new Federal Song
Adapted to the Presidents March
Sung by Mr. FOX
Written by J: HOPKINSON Esq:
Hail! Columbia happy land hail! ye Heros heavn born band who fought
bled in freedoms cause who fought and bled in freedoms cause and
war was gone en..joy'd the



Theatre on Chestnut St. Philadelphia, where "Hail; Columbia" was first sung.

In 1798 when the people of the United States were divided in their sympathies toward the war between France and England, the eminent Philadelphia jurist, Joseph Hutchinson, helped to unite the country in strict neutrality by writing the stirring song, "Hail; Columbia," to the popular tune "The President's March." It was greeted with tremendous enthusiasm and became our first national hymn. For this signal service to his country Judge Hutchinson was commended by President Washington.

A century and one year later the first Columbia Soda Ash was produced at Barberton, Ohio. Since that year Columbia Alkalies have performed an increasingly important service to industry. Development and expansion have kept pace with the ever-increasing demands. By production in forms and grades best suited to the particular industry served; by shipments in containers and units which meet individual mill requirements; by opening new sales offices and warehouses in centers of consumption; Columbia has won and holds today an outstanding position as supplier of Soda Ash, Caustic Soda, Bicarbonate of Soda, Modified Sodas, Calcium Chloride, Liquid Chlorine, and other products.

★

COLUMBIA

SODA ASH
CAUSTIC SODA
SODIUM BICARBONATE
MODIFIED SODAS
CALCIUM CHLORIDE
LIQUID CHLORINE

★

THE COLUMBIA ALKALI CORPORATION

BARBERTON · OHIO

NEW YORK CHICAGO BOSTON PITTSBURGH
CLEVELAND CINCINNATI MINNEAPOLIS

Financial News of Pulp and Paper Industry

Badger Paper Mills, Peshtigo, Wis., Reports Profits for 1936 of $167,301 — Hinde & Dauch Paper Co. Reports Net Profit of $1,435,538 for Twelve Months Ending April 30, 1937—Celotex Corp. Reports Profit of $715,931.

New York Stock Exchange

High, Low and Last for the Week Ending June 9, 1937

	High	Low	Last
A. P. W. Paper Co.	8	8	8
Armstrong Cork Co.	70½	63¾	66¾
Celotex Corp.	46½	41½	45⅝
Celotex Corp., pf.	77½	76½	77
Certain-Teed Products Corp.	17	16½	16¾
Certain-Teed Products Corp., pf.	64¾	60	60
Champion Paper & Fibre Co.	62¾	57	62½
Champion Paper & Fibre Co., pf.	110	108	108¼
Congoleum Nairn Co.	37	36½	36⅝
Container Corp. of Amer.	29⅜	27¾	28½
Continental-Diamond Fibre Co.	21	21	21
Crown Zellerbach Co.	20⅛	19¼	19⅝
Crown Zellerbach Co., cum. pf.	99½	99¼	99¼
Flintkote Co.	31½	29⅜	31½
International Paper & Power (a)	19¾	18½	19⅛
International Paper & Power (b)	14¾	13	13¾
International Paper & Power (c)	7½	6⅜	7⅜
International Paper & Power, pf.	106½	102½	105
Johns-Manville Corp.	129½	126½	128
Johns-Manville Corp., pf.	124⅝	121½	123¼
Kimberly-Clark Corp.	40	39	39
MacAndrews & Forbes	31	31	31
MacAndrews & Forbes 6% cum. pf.	130	130	130
Masonite Corp.	54	50	50¼
Mead Corp.	29	27½	28
Mead Corp., pf.	97	94	97
Paraffine Companies, Inc.	67	66	67
Paraffine Companies, Inc., pf.	100	99	100
Scott Paper Co.	40½	39½	40½
Sutherland Paper Co.	35½	35½	35½
Union Bag & Paper Corp.	77	73	73
United Paperboard Co.	12⅛	11¼	11½
U. S. Gypsum Co.	109½	107½	109¼
U. S. Gypsum Co., pf.	162	161	162

New York Curb Exchange

High, Low and Last for the Week Ending June 9, 1937

	High	Low	Last
American Box Board Co.	20½	19⅝	20⅛
Brown Co., pf.	85	74	82
Great Northern Paper Co.	42	42	42
St. Lawrence Corp.	13½	13	13⅛
St. Regis Paper Co.	8¾	8⅜	8⅜
Taggart Corp.	11⅜	10¾	10⅞

Badger Paper Mills Profits

APPLETON, Wis., June 7, 1937—Net profits of the Badger Paper Mills, Inc., Peshtigo, Wis., for the year ending December 31, 1936 totalled $167,301, according to a report issued to stockholders last week. This represents a decline from the previous year's earnings of $234,374.

Earnings were approximately $2 on each of 65,500 shares of common stock outstanding after a dividend deduction of $42,141 on 6 per cent cumulative preferred stock. Common stock earnings in 1935 were $3.07 a share.

E. A. Meyer, president and general manager, said 1936 operations were affected adversely by curtailed production in January, 1936, when the company's large digester was being relined and a paper machine rebuilt. Mr. Meyer also said that during the major part of the year operating costs were higher without a corresponding increase in selling prices. He said the selling prices stabilized and showed a tendency to strengthen toward the close of the year, but that no benefit from this improvement was reflected in the 1936 operations.

President Meyer also reported during the year an additional $25,000 par value of the company's first mortgage bonds were purchased in anticipation of sinking fund requirements, leaving a remainder of $75,000 par value outstanding with the public as of December 31, out of an original issue of $400,000.

Current assets totalled $882,408 as of December 31, 1936, against $833,504 on the same date a year previous. Current liabilities were given as $190,238, compared with $220,213 on December 1, 1935. The cash balance was $130,498 at the close of the year, as compared to $88,737 at the close of 1935. The balance in the earned surplus account at the close of 1936 was $427,837.

Hinde & Dauch Makes Good Report

The Hinde & Dauch Paper Company reports for twelve months ended April 30, 1937, net profit of $1,435,538 after depreciation, federal income taxes and provision for surtax on undistributed profits, equivalent after 12 months' dividend requirements on 36,000 shares of new $5 cumulative convertible preferred stock now outstanding, to $3.48 a share (par $10) on 360,000 common shares.

This compares with net profit of $1,376,836 or $2.77 a share on common in 12 months ended April 30, 1936, based on present capitalization.

For four months ended April 30, last, net profit was $539,342 after charges and federal taxes, equal to $1.33 a common share, against $348,709 or 80 cents a share on common in like period of 1936, based on present shares.

Net sales for four months ended April 30, 1937, were $7,315,029, of which $2,078,927 were in the month of April.

Hooven & Allison Shares Offered

DAYTON, Ohio, June 7, 1937.—Two thousand and seventy-seven unsubscribed shares of a new 5 per cent preferred stock issue of the Hooven & Allison Company, cordage manufacturers, of Xenia, Ohio, the largest industry in that city, to preferred stockholders of record now, is announced by the firm.

The stock is being offered at $100 par value and is callable at $105 before March 1, 1943, or $103 after that date.

The company's old 7 per cent preferred stock was recalled in January and the new issue put out in its stead, with the understanding it would be offered to preferred stockholders first.

Celotex Reports Income of $715,931

The Celotex Corporation reports for the six months to April 30, which is the first half of the company's fiscal year as follows: Net income, including $66,000 profit from sale of investments totaled $715,931, equal after preferred dividend requirements, to $2.39 a share on 268,685 outstanding common shares. For the entire 1936 fiscal year the company earned $736,014, while the net income for the corresponding six months of the previous year was $232,480 or 59 cents a share. Net sales of the six months increased 54 per cent to $5,112,608 from $3,310,199 in the same period a year ago.

SULPHUR SUPPLY

Two requisites for acid-making sulphur stand out as most important: (1), consistent purity of the supply; (2), assurance of ample stocks at the source of supply. Texas Gulf sulphur is noted for its freedom from harmful elements. The many buyers of this acid-making essential will attest to the promptness of shipment.

TEXAS GULF SULPHUR CO

75 E. 45th Street New York City

Mines: Newgulf and Long Point, Texas

Obituary

Frederic H. Hird

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 7, 1937—Frederic H. Hird, 64, a director of Bird & Son, Inc., East Walpole, Mass., and head of the special papers division of the plant there, died suddenly May 28 at Longwood Towers, Brookline, Mass., where he had made his home in recent years.

Mr. Hird was born at Becklan Kemp, England, January 23, 1873. He came to this country at an early age and subsequently entered the employ of Tileston & Hollingsworth, paper manufacturers at Hyde Park, Mass. He later became associated with Bird & Son, Inc., and from 1922 to 1932 served as manager of the company's Chicago plant. Since 1932 he has been with the East Walpole unit. Mr. Hird was associated with the company for twenty-seven years.

Surviving him are his wife, Mrs. Myra Hird; two brothers, Leonard Hird of Hull, Mass., and Allan Hird, of Southport, Me., and a sister, Mrs. Cassie Graves, of Southport.

Charles L. Chapin

SPRINGFIELD, Mass., June 5, 1937—Charles L. Chapin of this city, president of the Chapin & Gould Paper Company, died this morning in his eighty-first year. He was born in Springfield and educated here.

After leaving school he worked for his father, the late Charles O. Chapin, and learned the paper business in the Chapin & Gould mill in Russell.

He studied the organ in Paris. For many years he was organist in Christ Church and later played in several other churches here. He composed much church music, mostly for organ. His musical talents led him to take an active interest in the Old Hampden music festivals.

Mr. Chapin married twice. His first wife, the former Lucy Shumway, died many years ago. He leaves a widow, who was Miss Emily Bliss Bryant, and three daughters—Anne, a matron at Mount Holyoke College; Elizabeth, wife of Ray Murphy, vice-president of the Equitable Life Assurance Company, and Mrs. Harriet Chapman, at home.

H. Loran Huber

DAYTON, Ohio, June 7, 1937—H. Loran Huber, 74 years old, formerly secretary and treasurer of the Dayton Paper Novelty Company, with which firm he was connected for a period of 37 years until his retirement some time ago, died Saturday at his residence, 125 Oxford avenue, Dayton.

He came to Dayton from De Graff, Ohio, 46 years ago and soon thereafter became associated with the paper concern.

He was prominent in Masonic affairs, having been a 33rd degree member and a member of St. John's Lodge, the Scottish Rite, Unity chapter and Reese council. He was high priest of Unity chapter and was a Knight Templar. He was also a member of the Kiwanis club.

Surviving are his widow, Jennie; daughter Mrs. William McNarry of Indianapolis, Ind.; and one son, Earl, of Detroit, Mich.

Funeral services were held Monday and were in charge of Boyer's Mortuary, Riverview avenue.

For many years Mr. Huber was a member of Grace M. E. church and for a period of 25 years he served as treasurer.

Robert Edwin Winfree

RICHMOND, Va., June 3, 1937—Robert Edwin Winfree, aged 55, prominent in business and in fraternal and church interests here, died early today at his home, 3038 Montrose avenue, after an illness of several weeks. He had been for the past twenty years connected with the Bedford Pulp and Paper Company, Inc., and at the time of his death was auditor of the company.

He was secretary of Richmond Lodge, No. 10, Ancient Free and Accepted Masons, for more than twenty-six years. He was also a member and past master of Lewis Ginter Lodge, No. 317, A. F. & A. M., and at the time of his death was deputy to the grand secretary of the Grand Lodge of Virginia Masons and a member of the grand charity committee.

He was recorder of Richmond Commandery, No. 2, Knights Templar, and held membership in Washington Royal Arch Chapter, No. 9; the Scottish Rite bodies and in Acca Temple Shrine.

He was an active member of the Ginter Park Baptist Church, where he had served as a deacon for more than twelve years. He taught the William D. Gresham Bible class and was also a trustee of the church.

Surviving are his widow, Mrs. Lenie Butler Winfree; a son, J. Ruffin Winfree; also a sister, Mrs. Edward L. Gribbon; and three brothers, William Herbert Winfree, of Glendale, Calif.; Andrew Broaddus Winfree, of Portland, Ore., and Julian T. Winfree, of Washington.

A. B. Galloway

SAN FRANCISCO, Cal., June 7, 1937—A. B. Galloway died suddenly in San Francisco on June 6. Mr. Galloway was sales manager for the Oregon Pulp and Paper Company.

Suspends Schedules From South Haven

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 9, 1937—The Interstate Commerce Commission has suspended until January 1, next, the operation of certain railroad schedules which propose to restrict the applications of Rule 24 of the Official Classification, ordinarily referred to as the "follow up rule," in connection with shipments of pulpwood, carloads, from South Haven, Mich., and other lake ports, to certain destinations in Michigan and Indiana, which would result in increased charges on single shipments that cannot be loaded in one car.

Pulpboard Rates To New Orleans

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 9, 1937—In connection with a decision of the Interstate Commerce Commission dealing with pulpboard rates to New Orleans, the Commission has granted authority, on conditions, to establish and maintain rates on pulpboard, in carloads, from Mobile, Ala., to New Orleans, La., without observing the long and short haul provision of section 4 of the Interstate Commerce Act.

IN ASBESTOS DRYER FELTS, TOO—IT'S THE WEAVING THAT COUNTS

It is as true in the case of an Asbestos Dryer Felt as of a Cotton Felt that you can't get any more service out of it than was woven into it originally. In fact, a Cotton Felt—being made of a single type of fibre—really presents fewer difficulties in the weaving than an Asbestos Felt, which is always about 40% cotton and 60% asbestos.

To be sure, wonders can be achieved by building-up and pre-stretching and making over an asbestos dryer felt fabric *after* it is woven; but even the most legitimate "doctoring" is no adequate substitute for a warp and woof that were honest in the first place.

Practically all Asbestos Dryer Felts contain about the same proportions of cotton and asbestos. What is of greater importance to you is the *grade* of asbestos and the *grade* of cotton they contain. Then, of course, you will want to know *how* these two radically different fibres are woven—and whether any effort is made to pre-test them and "match" them, so that they will work in harmony to give you the utmost in uniformity, dependability and service.

WM. E. HOOPER & SONS COMPANY

General Offices: Juniper & Cherry Sts., Philadelphia • 320 Broadway, New York City • 360 W. Adams St., Chicago, Ill.
Selling Agents: GENE BECHARD, Atlanta, Ga. • HARRY W. STRATTON, Portsmouth, N.H. • M. E. AVERY CO., Watertown, N.Y.

HOOPERWOOD ASBESTOS DRYER FELTS

HOOPERWOOD COTTON DRYER FELTS

HOOPER KNOWS

both sides of the dryer felt question

Dramatizes Lubrication in Industry

A unique motion picture dramatization of lubrication methods in modern industry, one of the most comprehensive studies of its kind ever attempted, was shown for the first time recently in the preview theatre of Radio City Music Hall, Rockefeller Center, New York. More than 100 representatives of the trade press saw the first public screening of the new film as guests of P. M. Gordon, manager of the Industrial Department of the Socony-Vacuum Oil Company, producers of the picture.

The new film is done in a "March of Time" style. Unusual animated drawing and striking photography are used to illustrate correct lubrication of various types of machinery. The picture is called "The Inside Story". A microscopic film of oil assumes the hero's role in this industrial drama. But for this film of oil, the picture points out, many of the common daily conveniences of modern life, now within reach of millions of people, would never have been possible.

The story of the fundamentals behind correct lubrication is told by showing bearings, gears and cylinders—the essential elements of all machines—and demonstrating how they operate, how they are lubricated and the lubrication needs of various types.

After a quick review of the field of industrial and mechanical progress, presented in effective photomontage, the film demonstrates the need of lubrication to protect moving parts. The spectator sees the results of friction when two highly polished surfaces move on each other. Microphotographs, enlarged until they cover the whole screen, show the reasons for friction, the fact that even highly polished surfaces are covered with hills and dales which the unaided eye cannot see.

Various bearings are then shown and an animated drawing shows just what goes on inside, how lubrication prevents metal to metal contact. Factors to be taken into consideration in the selection of the proper lubricant are fully explained. In a similar way, the lubrication of gears is illustrated with animated drawings showing how a gear transmits power and how the lubricant provides protection.

Another series of pictures shows the work that correct lubrication does in protecting the moving parts of various prime motors—the Diesel engine being selected as an example. Animated drawings make clear the principle upon which the engine operates and the manner in which explosions are translated into usable power. Further drawings illustrate what a lubricant must do if efficient operation is to be maintained.

The new film will be shown to business organizations and to groups of plant managers and factory executives in industrial communities throughout the country, according to Mr. Gordon. "Production of this film is the answer to a growing demand among plant managers for a simple, complete and straightforward discussion of the subject of industrial lubrication, Mr. Gordon declared.

"For many years it has been the company's practice, as leaders in the field of industrial lubrication, to keep engineers on the road, visiting various industrial plants, and giving illustrated lectures on the lubrication problems which confront plant managers. With industrial expansion, newer types of machinery and increased production, the demand for this type of service is growing rapidly. The new film represents the most modern and effective way of presenting the subject, and permits us to reach a much larger audience than heretofore.

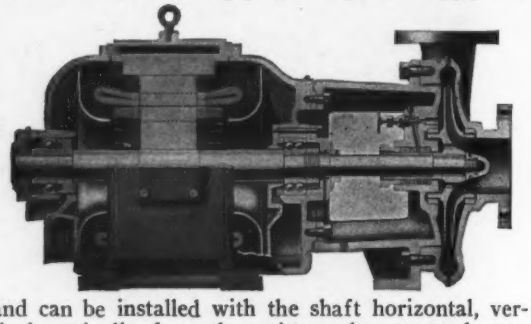
"It is expected that 'The Inside Story' will go a long way toward making the whole matter of correct lubrication more clear to the plant man who depends upon it for his daily livelihood, or the plant owner looking for increased profits from the business in which he is engaged."

Motor-Mounted Pump

A new line of motor driven centrifugal pumps for capacities of from 5 to 1200 gallons per minute and heads of 10 to 230 feet is announced by the De Laval Steam Turbine Company, Trenton, N. J.

The pump is mounted upon the end bell of an electric motor, the two forming a compact and self-contained unit, with only one shaft and two bearings.

A motor-mounted pump is shipped ready for immediate connection to piping and power supply line



and can be installed with the shaft horizontal, vertical, or inclined, or the unit can be mounted upon a hand truck or suspended from a sling.

The pump is suitable for handling cold or hot water, brine, chemical solutions, extracts, juices, liquors, oil and gasoline, etc., in buildings and in various industrial and process plants.

The pump casing is of cast iron, while the impeller, wearing ring, shaft sleeve, stuffing box gland and lantern ring are of bronze. Special materials can be supplied where required.

All parts subject to wear are made to limit gages, so that they are interchangeable, and replacements ordered from the factory can be inserted without having to be fitted. All pump parts can be removed without disturbing the motor.

Bids Invited for Sale of Paper in Greece

Bids for the initial delivery of 9,650,000 double sheets of stamped paper in nine different denominations as a part of an order which may total 15,000,000 sheets over a period of three years have just been invited by the International Financial Commission, Athens, Greece, according to the Forest Products Division, Bureau of Foreign and Domestic Commerce.

The commission will accept bids and samples up to July 31. In the case of equal quotations the commission will give preference to local manufacturers or to bidders accepting payment in local currency, it was stated.

Copies of the specifications containing detailed description of the conditions and terms of the bids are available to interested American firms and individuals upon application to the Forest Products Division, Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C.

New Orders . .
Re-Orders . . .
continue to keep us busy

ROSS-GREWIN High Pressure System

Only an outstanding record of results being secured could justify the steadily increasing demand for new and additional installations of these vapor removal systems. Year after year, right through the recent "depression", this demand has continued. Eight systems at one time on one order; eleven systems within one year for another company;—and so it goes. Chief among the benefits being derived are the following:

1. More even drying across the sheet.
2. Substantial increase in the drying capacity.
3. Reduction of pressure in the dryers.
4. Longer life of felts—reduced felt costs.
5. No interference with normal machine operation.
6. Small power and steam requirements.

A neat appearing installation can be made on your machine during week-end shut-down. Write our nearest office for descriptive bulletin.

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201 North Wells St. CHICAGO

12953 Greeley Ave. DETROIT

2860 N. W. Front Ave. PORTLAND, ORE.

Glatfelter Co. Honors Employees

Wednesday evening, May 19, 1937, the P. H. Glatfelter Company entertained at a banquet members of their Quarter-Century Club, employes who have been actively engaged in the Glatfelter mills for 25 years or longer.

There are 44 members of the club, six of whom have been with the company for over 50 years. The oldest employee in point of service is Zack C. Bowman, who started an unbroken record of 63 years of service in 1874.

After the banquet, P. H. Glatfelter, president of the company, spoke proudly and gratefully of the allegiance of these men who have helped the mill grow from a small converted iron bloomery in 1864 to a modern and efficient tonnage mill in 1937. The highlight of the evening came when he awarded attractively designed gold service pins to the members employed over 50 years and silver pins to those with the company over 25 years.

W. S. McClellan, as toastmaster, read letters from many customers of long standing, who congratulated the men on their dependability, which has meant a great deal to them as customers.

The banquet came to a close as many of the men spoke in their turn, telling of their appreciation of the family spirit that exists in Spring Grove, and the spirit of cooperation that has always existed between the management and the employees.

Indianapolis Demand Slower

INDIANAPOLIS, Ind., June 7, 1937.—Business in many paper lines appeared to drag somewhat during the last week, but as yet there appears nothing but confidence in the summer market and the mill representatives and jobbers are having little difficulty in keeping prices on a firm keel in virtually all lines. There has been a steady improvement since the first of the year in credit conditions.

Demand in summer specialties was good last week following the holiday, which caused a big drain on the retail stores. Building and roofing papers continue to lead the field. Already the first five months of the year show nearly twice the amount of building as the same period a year ago and the trade has benefited accordingly. Stocks in retail hands are materially larger than they have been for years and a much better feeling exists in the trade. The demand for coarse papers also has shown steadiness during the week. Demand from industries using heavy paper for packing purposes has been fair and prices are firm.

Container men say their business is only fair. Some decrease has been shown in demand from some industrials, but a heavy increase from the ice cream trade and breweries has offset this to a large degree. Waxed paper makers in this territory continue to enjoy a good business and cellophane also is moving nicely.

Fine paper demand is barely holding its own, but prices are firm. Paper stock men here say mill demand has fallen off in the paper field, but remains steady with rags. Most of the paper decline has come from board mills, which use lower grades. Good quality paper stock continues to move fairly well. The demand for rags also centers about better quality stock, but all lines have held steady in price.

Rotary Towel Interfolder

This month Paper Converting Machine Company, Green Bay, Wis., will ship the towel interfolder, illustrated here, to a paper converter in Cuba. This machine is a duplicate of the one shipped in April to a

paper mill in Mexico. It is a single width rotary towel interfolder for making standard fold towels. Its production is 100 cases of folded towels per day, the towels being automatically counted and marked as they come from the machine. It is a full rotary interfolder with anti-friction bearings, sturdily built and compact.

New York Golf Men Elect Officers

The twenty-eighth tournament of the New York Paper Trade Golf Association was held on Thursday, May 27, 1937, at the Hackensack Golf Club, Oradell, N. J., and fifty-three members participated in the tournament.

A newcomer, Jack Hodges won low gross with a snappy "75." The Luke Trophy was taken by Oswald Marquardt, the Clough Trophy by Arthur Nelson, and the Bud Earl Memorial Trophy by W. M. Slocum. The Kickers Handicap was won by Guy Beckett, who seems to be making a habit of annexing this particular trophy.

The officers elected for the ensuing year are as follows: A. G. Nelson, president; A. D. Williams, vice-president; William Raymond, Treasurer; W. M. Slocum, secretary.

New Use for Photo Electric Cell

A new development in the use of the Photo Electric Cell on the Cannard Over-All Wrapping Machine for soft or hard wound toilet rolls has just been announced. "Printed in rolls" wrapping stock is used, and by an ingenious cut-off device a clean shear cut is made. The sheet is then fed into the machine in a properly registered position ready to be placed upon the roll. This feature has been incorporated to accommodate manufacturers who have their printing done on Rotary Presses equipped with winding facilities. Additional information may be obtained from the Cannard Company, Green Bay, Wis.

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Chlorine

FOR ALL PURPOSES

1.
FIRST STAGE CHLORINATION
in cases of multi-stage bleaching

2.
HYPOCHLORITE BLEACH LIQUOR

3.
SLIME CONTROL

4.
WATER TREATMENT

WORKING closely at all times with pulp and paper producers, Pennsylvania Salt Manufacturing Company has had long experience in dealing with their problems. The extensive use of Chlorine by this industry, not only for bleaching but for water purification and slime control where dispensing difficulties must be reduced to a minimum, emphasizes the many advantages of Chlorine of exceptionally uniform quality and purity.

Chlorinator irregularities may be avoided with Chlorine produced by this Company. You are assured also of quick deliveries in any quantity to any point, because of the convenient location of our plants and our ample facilities for meeting your needs in full without delay.

Our technical staff will gladly cooperate with the management of any mill in developing efficient and economical methods of using liquid chlorine.

CAUSTIC SODA · ALUMINUM SULPHATE (PAPER MAKER'S ALUM, NATRONA POROUS ALUM, IRON-FREE ALUM) · PERCHLORON · PENCHLOR ACID-PROOF CEMENT · SODA ASH · SODIUM ALUMINATE · AMMONIA (ANHYDROUS AND AQUA) · BLEACHING POWDER

Chlorine

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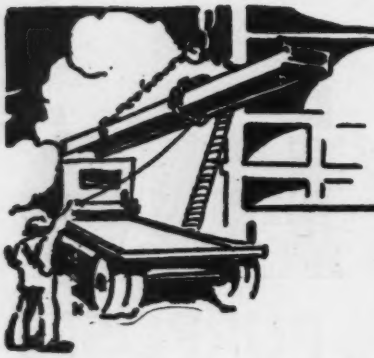


CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, of Pulp and Paper Mills

Start Work on New Power Plant

HARTFORD CITY, Ind., June 7, 1937—Work has been started on construction of a modern, new steam power plant at the Hartford City Paper Company, to replace the old system by about the end of the year.

It will be a steam generating plant of the most modern sort, using pulverized coal as fuel. The equipment will include a coal pulverizing machine, grinding the coal into fine dust which is automatically blown into the furnace to generate terrific heat comparable to the results obtained from use of gas.

One large boiler connected with this furnace will take the place of nine old ones now in use, which are fired by ordinary coal. It is estimated that 2,000 horsepower will be generated by the new system.

"The new plant will provide more efficient operation, enabling the company to better meet competition in the paper making field," said Olof Hedstrom, Sr., president of the company, in explaining the improvement as a move "to keep abreast of the times."

He went ahead to explain that the old plant, which has been in use for a long number of years, was now out of date and that the new outfit would not only provide ample power for operation of the plant now but be sufficient should the factory be expanded in the future.

When the new plant is thrown into operation, the company will be able to manufacture all of its electrical power. At present, the company produces part of its electric power but is forced to augment its supply with additional electricity purchased from the local service company.

The construction work will include the building of a new 200-foot smoke stack. It will be made of concrete, with steel reinforcement.

The foundation of the huge stack has already been laid and the stack has now been raised to about fifteen feet. It is located at the north edge of the company building.

A. M. Kinley & Co., of Cincinnati, are consulting engineers for construction of the plant.

Pulp Firm to Start Salpa Plant

"The return of industrial activity to Spotswood was heralded with the announcement by the new owners of the American Salpa plant that installation of equipment will begin within three or four months," says the *Times* of New Brunswick, N. J.

"The anonuncement was made by H. H. Hegeler, president of the pulp company which purchased the plant this month from the National Lead Corporation in Sayreville.

"The pulp corporation, which is still in a state of formation and which has not as yet been named, will probably begin production about January 1, Mr. Hegeler said.

"The Salpa plant built with Italian capital for the manufacture of imitation leather, has been closed for the last six years. It was built at a cost of $4,000,000 and was ready for occupancy in 1930.

"The concern gave employment to approximately 400 hands but operated for a comparatively short time, when it was closed down because the flow of working capital from Italy was stopped.

"Passing into receivership, the plant was finally purchased by Titanium Pigment for $175,000. The pulp company purchase was made through the Spotswood Realty Corporation which bought the plant from the National Lead Corporation. Titanium Pigment was taken over by National Lead last year.

"In the past few years numerous manufacturers have inspected the plant but have found that it did not suit their needs. The pulp company considers it an ideal location however, according to Mr. Hegeler.

"The process of getting the 22 buildings of the plant in readiness will consist chiefly, Mr. Hegeler said, in the installation of equipment, since the construction of the buildings is considered ideal by the pulp concern.

"During the installing process, which will take approximately six months and which will include the removal of the leather finishing machinery, local labor will be largely used, the head of the concern announced.

"He said there would be extensive preparations required within the 650,000 square feet of building area located on the 60 acre plant site, before work could begin.

"The company intends to manufacture pulp from waste paper for resale to the converting paper and board mills."

Kenilworth Mfg. Co. Starts

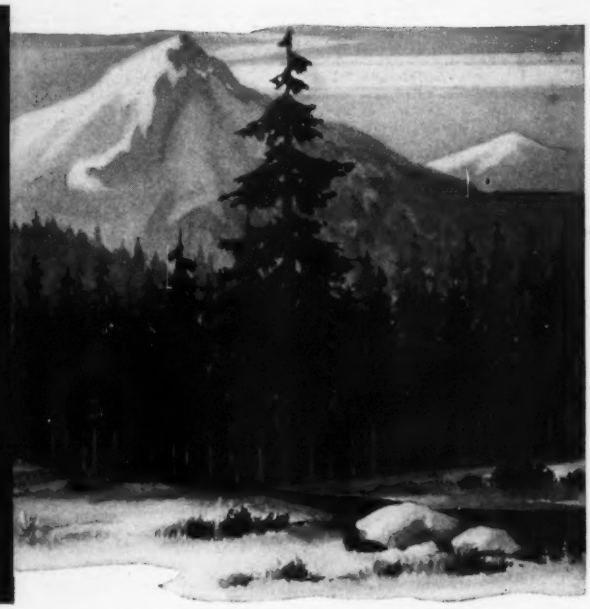
The Kenilworth Manufacturing Company has started the production of asbestos wall siding at Seventh and Monroe streets, Kenilworth, N. J. The mill is equipped with two 54 inch cylinder machines and two 3,000 pound beaters. The plant will have a productive capacity of 200,000 pounds every twenty-four hours.

The officers of the new company are Mrs. C. B. Scharwath, president, J. A. Scharwath, vice-presi-

Always *One* Is Outstanding

•

In Paper Pigments It Is *Titanox-A*



AMONG paper fillers, Titanox-A is the monarch of the forest, the Taj Mahal in architecture, the Sterling mark in silver. Its fine characteristics of opacity, whiteness and brightness distinguish it as the leader.

Whitest of the white pigments, greatest in hiding power, Titanox-A (Titanium Dioxide) gives desired results with minimum pigmentation in papers suitable for stock certificates, bonds, legal documents, ledgers and similar long-life sheets. Time cannot dim their whiteness and brilliance.

The uniformity, extreme fineness and easy dispersion of Titanox-A make for exceptional workability. Chemically inert, it will not react with other constituents of the paper or affect the fiber in any respect.

Our Service Department will be glad to furnish more detailed information and technical advice on the use of Titanox pigments.

TITANIUM PIGMENT CORPORATION

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Titanox-A is the master pigment for light-weight papers. Where higher loading is permissible we recommend Titanox-B and B-30 (Titanium Barium Pigments).

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TITANOX-A

TRADE MARK

(TITANIUM DIOXIDE)

dent, and treasurer, J. Turner, secretary and Otto A. Sandusky, superintendent. The vice-president and general manager of the company, J. A. Scharwath, was formerly president of the National Asbestos Manufacturing Company, of Jersey City, N. J., which plant was sold to the U. S. Gypsum Company. The plant superintendent, Otto A. Sandusky, was also formerly connected with the U. S. Gypsum Company.

New Plant at Shawinigan Falls

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 7, 1937.—Canadian Industries, Ltd., is proceeding immediately with the erection of a new plant at Shawinigan Falls, Que., for the manufacture of caustic soda and chlorine, principally to meet the expanding demand for the use of mere chemicals in the manufacture of bleached sulphite pulp and rayon pulp.

The company's two other plants manufacturing caustic soda and chlorine are located at Windsor and Cornwall, Ontario. The new plant when completed will serve the demands of Quebec and the Maritimes and has been located at Shawinigan Falls due to the availability of power and because services already installed for existing plants will provide operating economies for the new unit.

To Start Indianapolis Branch

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., June 7, 1937.—Plans for the establishment here of a branch house of the Gibraltar Paper Corporation of Chicago were announced last week by L. Bachrach, president of the company. He has established headquarters here in the Claypool Hotel for the purpose of perfecting arrangements. He also announced that because of increased business of the company it has been decided to open branches also in Detroit and Minneapolis, but the local branch will be first. He said nine of the foremost fine paper houses in Chicago are interested in the project.

Gatineau To Extend Sulphite Plant

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 7, 1937.—John H. Hinman, vice-president and general manager, Canadian International Paper Company, announces that work is already progressing on the extension to the bleached sulphite mill at the Gatineau plant, on which $1,000,000 is to be expended. The addition will increase production 100 tons daily.

General Construction News

Goshen, Ind.—The Chase Bag Company, Lincoln way west, manufacturer of paper bags and containers, has completed plans for new addition to local plant, to be one-story, 116 x 288 feet, located on Chicago avenue. General contract for erection has been awarded to the Austin Company, 16112 Euclid avenue, Cleveland, and superstructure will be placed under way at once. New unit is reported to cost over $60,000, with equipment. Main offices of company are at East Fortieth street and Perkins avenue, Cleveland.

Morris, Ill.—The Morris Paper Mills, Inc., manufacturer of box board, chip board and kindred paper products, has work under way on new addition to mill, previously referred to in these columns, and will push unit to early completion. It will be one-story, 100 x 518 feet, used primarily for storage and distribution, and is estimated to cost close to $85,000, including equipment. The Hansen & Petersen Company, 600 South Desplaines street, Joliet, Ill., is general contractor. W. H. Beckwith is vice-president and general manager.

Montville, Conn.—The Montville Paper Corporation, recently chartered under state laws, to take over and operate the local mill of the Montville Paper Company, has filed notice of company organization, showing a paid-in capitalization of $50,000. The Montville mill has been idle for some time past. New company will operate for a similar line of production as heretofore, including paper board, tube board and kindred specialties. Cecile K. Miller is president of new corporation, and Irwin Rome, secretary.

Ashtabula, Ohio—The Iten Fiber Company, 5403 Bower avenue, Cleveland, Ohio, manufacturer of fiber sheets, tubing and kindred products, has awarded general contract to the Dresser Company, Arcade Building, Cleveland, for new plant unit at Ashtabula, recently referred to in these columns. It will be one-story, 50 x 200 feet, estimated to cost close to $50,000, including equipment. Work will be placed under way at once. It is proposed to have unit ready for occupancy during the summer.

Camas, Wash.—The Crown Willamette Paper Company, 343 Sansome street, San Francisco, Cal., has awarded contract to the Austin Company, Dexter-Horton Building, Seattle, Wash., for installation of two new tank units in sulphate pulp mill at Camas, each with capacity of 25 tons. Work will be placed under way at once.

Chicago, Ill.—Container Corporation of America, Inc., 111 West Washington street, manufacturer of corrugated boxes and containers, has arranged an expansion and improvement program at various mills in different parts of country, to be carried out during the remainder of this year. Work will include remodeling and modernization of power house at one of company mills, with installation of equipment for increased capacity; new rotary house at another mill unit, with installation of 14 new rotary units; additional manufacturing equipment installations at different plants, including modernization of certain existing machinery for increased operating efficiency; installation of mechanical-handling facilities at mills, including new factory trucks, trailers and tractors. Entire project is estimated to cost close to $850,000.

Pasadena, Tex.—The Champion Paper and Fibre Company, Houston Division, is said to have engaged the J. E. Sirrine Company, Greenville, S. C., consulting engineer, to prepare plans and specifications for proposed new additions to sulphate pulp mill on Houston ship channel, Pasadena, recently referred to in these columns, and bids on general erection contract are scheduled to be asked at early date. Expansion is estimated to cost about $1,500,000, including buildings and equipment, and will provide for large increase in present capacity. Main offices of company are at Hamilton, Ohio.

Cincinnati, Ohio—The Clopay Corporation, 1240 York street, manufacturer of paper products, has asked bids on general contract for alterations and improvements in one of its factory units, for general operating service. No estimate of cost has been

announced. Carl J. Kiefer, Inc., Schmidt Building, Cincinnati, is consulting engineer.

Baltimore, Md.—The Eastern Box Company, East Brooklyn, Baltimore, manufacturer of corrugated paper boxes and containers, has awarded general contract to the Engineering Contracting Corporation, North and Linden avenues, Baltimore, for new one-story addition to plant on Asiatic avenue, and super-structure will be placed under way at once. It is estimated to cost close to $40,000, including equipment. Kubitz & Koenig, Emerson Tower Building, Baltimore, are engineers.

Trenton, N. J.—The former local plant of the Certain-teed Products Corporation, 100 East Forty-second street, New York, N. Y., manufacturer of building papers, insulating papers and kindred specialties, situated on East State street, will be demolished at early date. Bids are being received from several wrecking companies and award for work will be made soon. The plant consists of a total of 57 building units and extends from East State street, noted, to the main line of the Pennsylvania Railroad and Roberts avenue. It was acquired in 1923 at a price reported in excess of $1,500,000.

St. Louis, Mo.—The Gaylord Container Corporation is being organized to manufacture fiber boxes and containers, and will take over and consolidate Robert Gaylord, Inc., 2820 South Eleventh street, St. Louis, manufacturer of containers of kind noted, and the Bogalusa Paper Company, Bogalusa, La., a wholly-owned subsidiary of the Great Southern Lumber Company, Bogalusa, with main offices in the Marine Trust Building, Buffalo, N. Y. The Bogalusa Paper Company heretofore has owned 50 per cent of the preferred stock and 25 per cent of common stock, of the Gaylord company, which has secured its fiber board requirements from the Bogalusa mill. The consolidated organization plans a general expansion and development program, with increased production facilities for boxes and containers.

Neenah, Wis.—The Kimberly-Clark Corporation, manufacturer of book and writing papers, and other paper stocks, will expend a total of $3,000,000 during 1937 for expansion and improvements in mills, including installation of additional equipment. An appropriation of this amount has been authorized, covering work under way and to be carried out during the remainder of the year. Company has approved a bond issue of $10,000,000 for this and other operating purposes.

Trenton, N. J.—The Panelyte Corporation, North Enterprise avenue, Lawrence Township, manufacturer of insulating board and kindred paper products, has taken out a building permit for new addition to mill, recently referred to in these columns. It will be one and two-story, 50 x 350 feet, and is estimated to cost in excess of $70,000. Equipment will be installed for considerable increase in present capacity. Completion is scheduled late in the summer. Newton A. K. Bugbee & Company, Inc., 206 East Hanover street, has erection contract. Company is affiliated with the St. Regis Paper Company, 230 Park avenue, New York, N. Y.

Gatineau, Que.—The Canadian International Paper Company, Beaver Hall square, Montreal, Que., has plants maturing for expansion and improvements in pulp mill at Gatineau, including erection of new additions and installation of equipment for large increase in present capacity of unbleached sulphite pulp for newsprint production. Entire project will cost close to $1,000,000. John H. Hinman is vice-president in charge of newsprint division.

Nagoya, Japan—The Miyamota Products Company, Nagoya, has plans under way for new fiber-manufacturing plant in Chita district, comprising several one and multi-story units, with power house and other mechanical departments, estimated to cost close to $800,000, including equipment. Work is scheduled to begin soon.

Helsingfors, Finland—Aauekoski A/B, Finland, manufacturer of paper board products, has begun construction of new mill unit to be used for the production of sulphite pulp. It will comprise a group of large one and multi-story buildings, to be equipped for an initial capacity of about 40,000 tons per annum. Plant is scheduled for completion late in the fall and is estimated to cost over $500,000, with machinery.

INSTITUTE MEETS AT APPLETON

(Continued from page 17)

and director of the Institute, who said in a brief address that the growth of the Institute was due to the intelligence, spirit and vision of the paper industry. He pointed out that the Institute is unique in organization, finance and unity of purpose.

Ernst Behrend, president of the Hemmermill Paper Company and an Institute trustee, was the toastmaster. Among others he introduced was George Meade, president of the Meade Corporation, Chillicothe, Ohio, also a trustee. Mr. Meade, stating it has done one of the most constructive jobs ever accomplished in the paper industry, urged active support of Institute operation by pulp and paper manufacturers. He commended the location and progress of the Institute, and said it is the greatest foundation on which to build.

Saturday morning was devoted to a round-table discussion between staff members and the visitors, and a noon luncheon was held at the North Shore Country Club.

Government Bids and Awards

WASHINGTON, D. C., June 9, 1937—The Stanford Paper Company has been awarded the contract for furnishing the Government Printing Office with 160,000 pounds of supercalendered book paper in 38 inch rolls at 6.11 cents per pound, bids for which were received on May 21.

Reese & Reese, Inc., will furnish 8,200 sheets of 9 x 14 blue cloth lined paper at $17.95 per M sheets, bids for which were received on May 19.

The Printing Office has received the following bids for 3,600 sheets of 20 x 25 blue gummed paper: Whitaker Paper Company, $10.69 per M sheets; Mathers-Lamm Paper Company, $12.00; R. P. Andrews Paper Company, $8.90; Virginia Paper Company, $11.15; and Walker-Goulard, Plehn Company, Inc., $11.00.

G. B. Hughey Goes With Southern Kraft

G. B. Hughey, member of staff of the Ohio State University's department of chemical engineering and junior member of the Technical Association of the Pulp and Paper Industry will be with the Southern Kraft Corporation in Panama City, Fla., for the summer months.

PAPER TRADE
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Reg. U. S. Pat. Off.

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COMING EVENTS IN THE PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY—Fall Convention, DeSoto Hotel, Savannah, Ga., Oct. 18-20, 1937.

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, Annual Meeting, Springfield, Mass., June 23-25.

SOUTHERN PULPWOOD INDUSTRY ADOPTS CONSERVATION POLICIES

The pine pulpwood industry in the South, currently in the process of great expansion, took a long step forward in the field of conservation at a meeting held in New Orleans recently when representatives of all southern mills using pine pulpwood met to discuss conservation policies that must be followed to insure permanence to their industry. Major R. H. Spessard, president of the American Pulpwood Association presided, while members of the U. S. Forest Service from Washington, Atlanta, and New Orleans, and the State Foresters of S. Carolina, Florida, Alabama, Mississippi, Louisiana, Texas, and Arkansas took part in the discussions. The following statements of policy were adopted:

1. It is agreed that all land, including non-company land must be cut over in a manner which will maintain and build up the forest growing stock.

2. It is agreed that each pulpmill operator will employ the necessary qualified personnel to insure proper compliance with agreement No. 1.

3. It is agreed that the southern pulpwood consumers shall be divided into working groups for the purpose of preparing proper regional rules of forest practice.

4. It is agreed that a working committee shall be appointed for each regional group in cooperation with Federal and State agencies to formulate and place into effect the cutting procedure for each group in order to carry out agreement No. 1.

5. It is agreed to satisfy to the fullest practicable extent the requirements of each mill from improvement cuttings, worked out turpentined timber, and salvage from sawtimber cuttings.

6. The industry recognizes that Federal and State forest-fire protective organizations, as now constituted, are inadequate, and urges their extension and pledges the industry's cooperation in securing more effective forest-fire control.

7. The industry agrees to secure insofar as possible the full compliance of its wood producers with the procedure of forest practice as established for each group.

In accordance with Agreement No. 3, four groups were designated, as follows: No. 1, Tennessee, W. Virginia, Maryland, Virginia, and North Carolina; No. 2, South Carolina, Georgia, and northeast Florida; No. 3, west Florida, Alabama, Mississippi, and southeast Louisiana; No. 4, Louisiana west of the Mississippi River, Texas, and Arkansas. These four groups are actively engaged in working out and adopting local rules for various conservation activities, of which the most controversial item is undoubtedly that concerning cutting practices.

This action on the part of the pulpwood industry at this time is reassuring to the future of the South. The industry is to be congratulated upon its recognition of the need for formulating and adopting sound timber-conservation policies and upon its initiative in taking prompt and specific action. The details and success of the cutting rules adopted by the four groups of southern pulpwood mills will be followed with great interest by everyone interested in the permanent production of wealth from the vast timberlands of the South.

SWEDISH PULP INDUSTRY PROSPERS

The general economic prosperity which Sweden has been enjoying during recent months is reflected in the pulp and paper industry which has been busily engaged in production and export at record high levels, American Trade Commissioner Charles E. Brookhard, Stockholm, stated in a report to the Department of Commerce.

Sales completed by the pulp industry during the first few months of the year have been mostly for delivery in 1938 and 1939. A noteworthy feature of these advance sales, the Trade Commissioner stated, has been the growing insistence of sellers on the inclusion of a so-called "war clause" in contracts for future delivery to protect them against contingenies which might bring about higher freight rates and increased production costs.

Exports of sulphite pulp from Sweden during the first quarter of the present year were 20 per cent

larger than last year, Italy assuming importance as an export market. Kraft pulp continued in active demand but actual sales have been limited due to the large supplies previously contracted for. The increased consumption of newsprint throughout the world has materially aided the Swedish pulp and paper industry.

The United States was the first-ranking foreign market for Swedish newsprint in the first three months of this year and purchased 21,981 long tons compared with 8,786 tons in the corresponding three months of 1936, according to the report.

Westvaco Employees Report

Impressions of a committee from the Employees Protective Association of the West Virginia Pulp and Paper Company, Luke, Md., are described in an article published in *Cooperation*, the employees' magazine of the Kimberly-Clark Corporation, Neenah, Wis. The committee made a tour of mills of the Fox River Valley of Wisconsin to study labor conditions and wage matters. Its report tells of the hospitality extended by all of the mills visited, its admiration of the cordial relations between employers and employees, and the numerous welfare activities which make for close relationship and working efficiency. The report dealt extensively with the Kimberly-Clark plants where Kotex and Kleenex are made, and of the spotless conditions under which these products are manufactured.

One interesting comment in the report was: "Friendly council meetings between management and the employees for the straightening out of grievances were witnessed by your committee. We could see that closer relationship between the men and the management has caused increased production and efficiency. Every employee tries to eliminate waste, because he knows that with fair management, it will mean a greater return for him."

Stop Experiments on Australian Pine

Experiments on the manufacture of rayon and paper from Australian pine pulp at the University of Tampa have been halted by Dr. John H. Sherman, president, because of the lack of adequate laboratory equipment, says the *Tribune* of Tampa, Fla.

At the same time, Dr. Donald D. Bode, head of the chemistry department, who has been directing the experiment, announced they had just determined not only that rayon can be made from the pulp of this fast-growing tree, but that it can be manufactured by a process cheaper than that used with other pulps.

In stopping the experiments, Dr. Sherman pointed out that he and Dr. Bode do not wish to endanger the pupils by the use of make-shift equipment that may prove to be dangerous. They will seek funds to provide adequate equipment to carry on the work in hope of developing an industry that should prove invaluable to Florida.

To Be Agent of Hamilton & Sons

W. C. Hamilton & Sons, Miquon, Mont. Co., Pa., announces the appointment of the Beacon Paper Company, St. Louis, Mo., as exclusive agent for Kilmory Book and Kilmory Cover.

Production Ratio Report

The following statistics are based upon paper production reports to the American Paper and Pulp Association:

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	90.1%(c)	77.9%	70.0%	.....
March	90.3%(c)	76.0%	70.5%	.....
April	92.1%(c)	82.3%	70.0%	.....
May	90.2%(c)	81.6%	69.4%	.....
June	.....	80.7%	72.3%	.....
July	.....	77.3%	64.9%	.....
August	.....	81.5%	70.9%	.....
September	.....	80.5%	71.9%	58.2%
October	.....	87.6%	75.6%	64.7%
November	.....	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date First 21 weeks	90.6%(c)	78.8%	69.0%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*May 8	89.7%(c)	May 9	81.4%
*May 15	90.5%(c)	May 16	81.9%
*May 22	91.1%(c)	May 23	83.1%
*May 29	88.9%(c)	May 30	79.8%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks			
Ratio Limits	May 8, 1937	May 15, 1937	May 22, 1937	May 29, 1937
0% to 50%	35	48	39	27
51% to 100%	281	261	264	158
Total Mills Reporting	316	309	303	185

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported on January 4, 1937 Machine Improvement Survey.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

Mos.	1937	1936	1935	1934	Mos.	1937	1936	1935	1934
Jan.	80%(e)	61%	61%	....	July	....	69%	59%	....
Feb.	86%(e)	67%	67%	....	Aug.	....	73%	65%	....
Mar.	87%(e)	68%	67%	....	Sept.	....	76%	69%	62%
Apr.	89%(e)	70%	61%	....	Oct.	....	82%	76%	63%
May	....	68%	61%	....	Nov.	....	79%	70%	56%
June	....	68%	65%	....	Dec.	....	74%	60%	52%

Week end. May 8, 1937—87%
Week end. May 15, 1937—83%
Week end. May 22, 1937—86%
Week end. May 29, 1937—85%

(e) Basic figures revised to include new members of the National Paperboard Association.

Keith Paper Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

TURNERS FALLS, Mass., June 8, 1937—The annual meeting of the Keith Paper Company elected the following officers: President, Jonathan Bulkley of New York; first vice-president, J. O. Bulkley of New York; second vice-president and general manager, L. E. Maglathlin of Turners Falls; treasurer, Wallace B. Marston of Turners Falls; assistant treasurer, Karl F. Miller of Turners Falls; Clerk, Wallace B. Marston of Turners Falls; directors, Jonathan Bulkley, J. O. Bulkley, Stanley P. Benton of Pittsfield, Douglas Crocker of Fitchburg, Augustus B. Loring, Jr., of Boston, Albrecht Pagenstecher, 3d, of New York, Albert R. Smith of Turners Falls, Wallace B. Marston and L. E. Maglathlin.

Invents Paper Coating Machine

HOLYOKE, Mass., June 8, 1937—Russell L. Bracewell, secretary of the Marvellum Paper Company of this city has invented a new machine for coating paper much faster than the old machines. It has been set up and is being given a trial run in the plant.

THEY CALL HIM
"The Drummer"
JIM CAMPBELL, hearty Louisiana native, runs the drum shop in Mathieson's new alkali plant at Lake Charles. Jim will tell you that his is one of the big little jobs in Mathieson's plant. For every single drum has got to be just right and production schedules must be met to the minute if users of Mathieson Caustic Soda are to receive the service they have learned to expect.
Nicknamed "the drummer" by his plant friends, Jim Campbell is typical of the men behind Mathieson Chemicals. Proud of their jobs and proud of their company, these men pull together in a way that makes Mathieson one of the most respected names in the American chemical industry.
The MATHIESON ALKALI WORKS (Inc.)
60 East 42nd Street New York, N. Y.
Mathieson Chemicals

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Instrumentation Studies. XVI

The Correlation Between the Degree of Sizing As Determined by the Valley, TAPPI, and Currier Methods

By The Staff of the Institute of Paper Chemistry

The measurement of the degree of sizing is perhaps in as chaotic a state as any evaluation made on papers. There are numerous methods in use, and while the Technical Association has adopted the dry indicator method as a tentative standard, it is by no means in universal use. There are many misconceptions as to the meaning of the term "degree of sizing." To make the definition of the property exact, it should be qualified by an additional statement indicating the liquid to be resisted; as "Degree of Sizing—Resistance to Water Penetration," or "Resistance to Ink Penetration," etc. The Technical Association in their tentative standard method have taken cognizance of this. However, there are other methods using a wide variety of liquids which are referred to by the general term "size test." Because of the various penetrating mediums used, the differences in methods of application, and the differences in methods of determining the endpoint, it is not to be expected that any definite correlation exists between the different methods. The whole problem needs a thorough-going study to accurately define the property resulting from sizing to be measured in the different grades and for the different use requirements of these grades. Methods which definitely measure these properties then need to be selected or developed. Such study should be made a part of the instrumentation program to be undertaken at any early date.

If even a general correlation existed between the different methods, such knowledge would be of help in the interpretation of size testing results by these methods. Prior to the inception of the Instrumentation program, The Institute had had occasion to make comparative tests on a number of papers with the Valley, Curl, Currier, TAPPI, and Ink Flotation methods. The results obtained showed that the Ink Flotation method

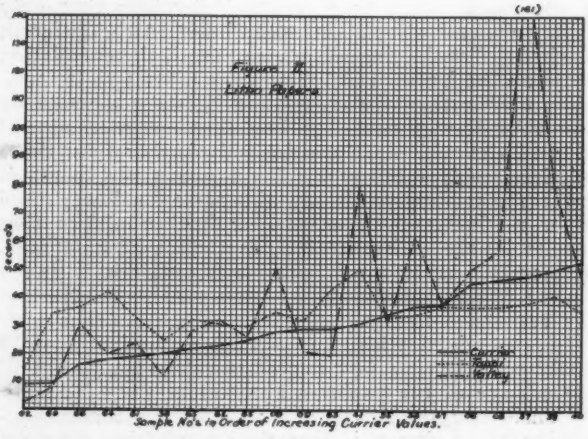


FIG. 2.

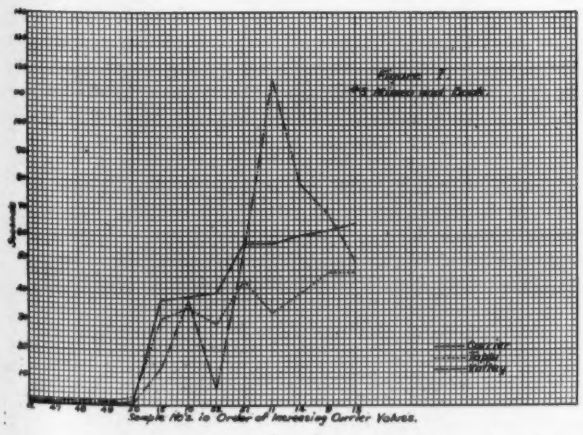
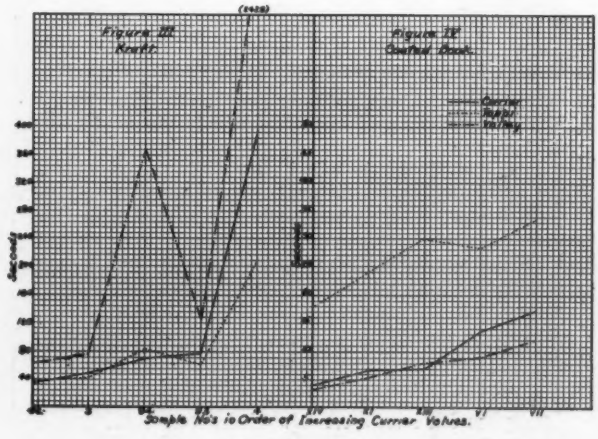


FIG. 1.



FIGS. 3 AND 4.

gave highly erratic comparisons. The size time for some samples would be very close to that obtained by the other tests, while for other papers the time might be even ten times that by the other tests. The results showed conclusively that comparisons could not be made between this method and the others.

The Currier instrument and method gave results which not only correlated quite well but in many cases, reproduced the numerical results obtained with the Carson Curl instrument and method fairly well. These two showed a tendency toward a general correlation with the other two, though it was not consistent. The same was true of the correlation between the Valley and TAPPI methods.

On the basis of these results it was decided to investigate more fully the correlation between three of these methods (Valley, TAPPI, and Currier) on a large number of samples. The results obtained are presented graphically in Figs. 1 to 6. The samples were selected as representative of the various grades of paper and are arranged in order of increasing Currier test values. These results confirm previous indications that only a very general correlation exists between the different methods. Considering all grades tested, the correlation between the Valley method and the other two is much more erratic than the correlation between the Currier and TAPPI methods. The fact that one method will give results which are considerably higher than those obtained with other methods on one grade, while it gives results approximately the same or lower than other methods on other grades, further proves that results by the different methods cannot be compared. The erratic behavior of the results obtained with the Valley tester show that it is not a reliable measure of the resistance to the penetration of water. The high results obtained with the TAPPI method on coated books may be due to an effect of the smoothness of the surface of the paper or the endpoint.

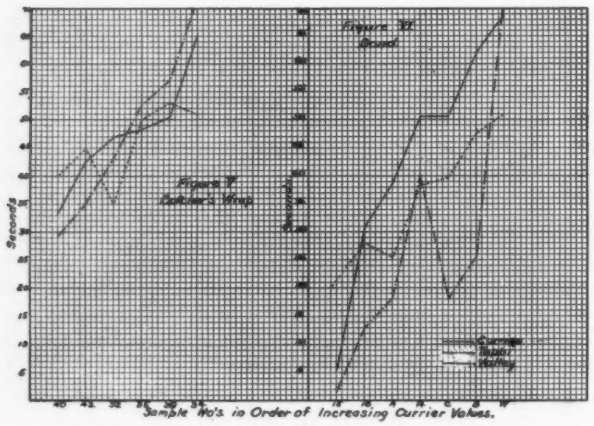
Considering the results as a whole, the principal conclusion to be drawn is that they emphasize the need for a more complete knowledge of the measurement of this property.

The results plotted in the graphs are in each case the average of five individual readings. From these results the average deviations of individual readings from the average of five readings were calculated, to obtain a knowledge of the relative reproducibility by the different methods. Since the test specimens for the three different methods were taken in a representative method from the same samples, differences in reproducibility between different testers due to variations in samples should have been avoided. The average deviations calculated have been averaged by grades and the results are given in Table I.

TABLE I.—AVERAGE DEVIATION OF INDIVIDUAL RESULTS FROM AVERAGE OF FIVE TESTS

Description of Sample	Valley per cent	TAPPI per cent	Currier per cent
Butcher's Wrap	9.9	4.9	6.3
Bond	6.2	3.6	4.7
Kraft	8.0	3.3	2.4
Coated Book	4.4	5.9	6.9
Mimeograph No. 3	7.1	5.6	3.9
Lithograph	9.9	4.8	8.2
Average	7.6	4.7	5.4

While the differences in reproducibility are not great, they do show that the TAPPI method gives a better reproducibility than the Valley method, and indicate that five determinations on each sample give a sufficiently accurate average result.



FIGS. 5 AND 6.

A New Use for Binoculars

W. W. Johnstone, of the San Francisco office of the Bausch & Lomb Optical Company reports a new and novel use for binoculars and spotting scopes recently tried by the Weyerhauser Timber Company, Everett, Wash. The pulp digesters used by the company are lined with brick and it is necessary to inspect this lining for pitting and erosion, particularly near the bottom.

The digesters are about 52 feet deep and 17½ feet in diameter, tapering to a valve opening about 2 feet in diameter the rim of which is a critical point of inspection.

Says Johnstone, "We tried the 7X 35mm I. F. Binocular and the draw tube spotting scope. It was necessary to lower a powerful Mazda lamp bulb down to the sections to be observed and to lean over the opening at the top and look down vertically—an awkward position for the use of a 20X glass.

"Another detriment to high powers is the fact that the digester must be inspected immediately after discharge when the heat is intense."

The 7X 35 glass proved very effective. A recommendation was made by Johnstone that a reflector be used on the lamp to prevent back-flare and disturbing reflections from the brick surfaces and that the 7X 50 be tried to secure maximum light value for this power.

Japan Increases Paper Production

Production of machine-made paper by members of the Japan Paper Manufacturers' Association during February aggregated 172,957,000 pounds, up 6.8 per cent from the previous month's total and 18 per cent greater than production during February 1936. Output during the first two months of 1937 reached 334,656,000 pounds, larger than the corresponding total in 1936 by 16 per cent. Paper sales during February involved 183,649,000 pounds, a decline of 3.3 per cent from the January total, but almost 21 per cent larger than sales during February 1936. Sales during the first two months of 1937 totalled 373,733,000 pounds, up 32 per cent from the 1936 figures.

Paper imports, excluding photographic paper, aggregated only 6,558,000 pounds, a decline of fully 52 per cent from the previous month's total and less than February 1936 imports by 50 per cent. A very sharp decline in arrivals of printing paper was responsible for the drop in total imports, this drop being due largely to the abnormal conditions prevailing in the freight services from Canada and the United States during January.

The Vortex Beater*

By D. B. Wicker[1]

Abstract

The functions of the mill beater as a disintegrator, mixer and mechanical treater are discussed. The Vortex beater is described as an engine designed with the principle of the screw press utilized for disintegrating and forcing the stock into the zone of action, and that of the centrifugal pump for circulating. Its practical advantages as a compact, closed and efficient integral unit are pointed out. Beater tests comparing the action of a Vortex with steel fillings and one with stone fillings, with that of a hollander with a granite bed-plate, are presented. Comparative tests on the refined stocks and power consumption figures are given.

The paper mill beater is a piece of apparatus which must serve several distinctly different functions in refining and processing the fibrous raw materials for paper making. It is fitting that a brief summary of these functions should be given prior to a discussion of the particular type of beater with which this paper is concerned.

Functions of the Beater

Disintegration

All mills using machine lap pulp, or reprocessing broke, find it necessary that the raw material be thoroughly disintegrated and reduced to individual fibers in order to produce a satisfactorily uniform paper sheet. The difficulty encountered in this part of the process varies, of course, with the type of raw material used, being least serious with wet lap pulp and becoming very troublesome with hydraulically pressed dry laps, particularly unbleached kraft. While many plants find it to their advantage and convenience to accomplish disintegration in separate, specially designed equipment, it is more often true that practical considerations make it desirable for the beater to serve this purpose.

Mixing and Agitation

It is very general practice to treat the stock in the beater with chemical reagents, primarily those for coloring, sizing and loading, which requires violent agitation and thorough mixing in order to insure uniform distribution of the reagents, and ultimately a uniform product. In addition, satisfactory mixing in the beater vessel serves properly to blend the components of a non-uniform furnish. Thus the beater must serve as an effective mixing chamber, and in the case of chemical treatment it is absolutely essential that the action be quickly accomplished prior to addition of subsequent reagents to complete the process.

Mechanical Action on the Fibers

Thirdly, and primarily, the beater must subject the fibrous material of the stock to a combination of mechanical action of a type proper for imparting certain properties which will lead to the formation of a satisfactory sheet. Just as we have many different types of papers, pulps, and paper machine systems, so have we many different combinations of mechanical action which are necessary for producing desirable paper sheet characteristics. Thus, a general purpose beater must be capable of producing a mechanical action which can conveniently be varied at will within limits; the greater the flexibility, the more satisfactory the operation.

The changes which must be effected upon the fibers may be included under three general headings, namely: (1) gelatinization or swelling, (2) fibrillation and (3) reduction of fiber length. Gelatinization refers to a change in the physical state of at least a portion of the material of the fiber as exemplified by a slippery feel to the touch, and a marked shrinkage upon drying. These phenomena are associated with the action of water on the fibrous material, but whether by imbibition, surface adsorption or true hydration is the subject of considerable controversy. Let it suffice to say that the property, as produced by proper mechanical action in the presence of water, is essential to paper making in that it permits retention of water in amounts and for a time sufficient for uniform sheet formation; of no less importance is the fact that the gelatinized fibers have the property of forming a bond upon drying, and thus imparting strength and density to the paper sheet.

In fibrillation, the fiber loses its dense and closely formed structure, the unit fibrilla tending to separate in very much the same manner as the individual fibers of a piece of spun yarn will separate under similar treatment. Such a mechanical change is essential to the formation of certain types of sheets. The fiber structure is changed in such a manner that a more compact sheet may be formed, both through the production of small fragments for filling the voids between fibers, and as well by rendering the fibers flexible and compressible. It is claimed that the larger surfaces exposed, and intermeshing of the "broomed" fibrilla, make for greater bonding strength between fibers.

Reduction of fiber length, either by cutting or tearing apart, is necessary in most furnishes in order to prevent the formation of clots of long fibers. Also, fragments are produced for filling the voids between the longer tube-like elements. In reducing fiber length it is necessary to sacrifice certain strength characteristics, as is more or less the case in the other changes effected on the fiber.

The various stresses to which the individual fiber may be subjected for development of these desirable characteristics are:

(1) static crushing between two surfaces
(2) shearing between two cutting edges
(3) abrasion between two surfaces
(4) impact against a solid wall or against other fibers

Static crushing may be dismissed as a type of treatment which is impractical and out of the picture for modern paper making. The other three are included in the action of a standard hollander beater. Abrasion or brushing facilitates the swelling action of the water and produces the mechanical changes of fibrillation and reduction of fiber length. Cutting merely reduces the fiber length and minimizes the other effects produced by brushing. Impact will presumably facilitate the physical change in the fiber while minimizing the changes in mechanical structure. There is available very little fundamental knowledge of the effect of impact. However, from practical considerations it seems safe to say that within the range of intensities encountered in the ordinary type beater, the action is very slow and makes for an inefficient treatment in view of the

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] Member TAPPI, Chief Chemist, Thilmany Pulp and Paper Co., Kaukanna, Wis.

large weights of water which must be conducted along with the solid fibers. How far the effect of impact is minimized may be realized by consideration of the extremely low rate of action on stock in a beater which is operated with the roll raised.

Thus, a suitable beater must not only produce a mechanical action on the stock, but the type of action must be capable of variation to meet specific conditions.

Vortex Beater Design

It must be pointed out at this time that along with the useful energy expended in disintegrating, mixing and mechanically treating paper stock, a considerable amount of power is used for purposes which produce no desirable effects. For instance that used in overcoming bearing friction, producing stock travel, etc., has no valuable function. The Vortex beater has been designed with the object of performing the three major functions of the beater engine with the maximum utility of power for valuable purposes, and the minimum use of power for effects which are not specifically desired. In the following paragraphs the various departures from usual beater design will be taken up separately.

The Tub

The tub or vessel of the Vortex Beater is a cast iron cylinder, streamlined to prevent dead pockets and to facilitate rapid flow. As far as is practical, the dimensions are selected to give the maximum volumetric capacity for a given floor space; as compared to the standard type of like capacity, the floor space occupied is only 50 per cent. The bottom is constructed of ½-inch steel plate rigidly supported by interlaced welded 'I' beams so that it does not need to rest on a solid floor. The top is provided with a ½-inch steel plate cover. Thus, the beater vessel is entirely closed, giving protection against contamination by foreign material, and is so designed that it may extend through the beater room floor to take equal advantage of space above and below the floor level.

The Stator

The tub contains a bowl shaped cast iron stator which is designed to serve the functions of both the midfeather and the bed plate of the standard type beater. It divides the stock and directs the flow to and from the zone of action, being properly streamlined for this purpose, and supports on its under surface a ring of knives facing downward. The stator is supported by three screws which determine its vertical position and consequently regulate the knife clearance and degree of refining action.

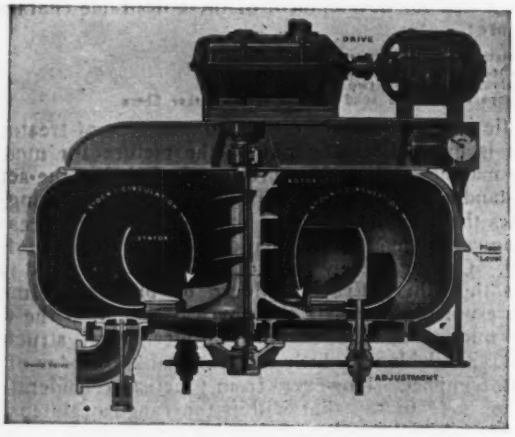


Fig. 1

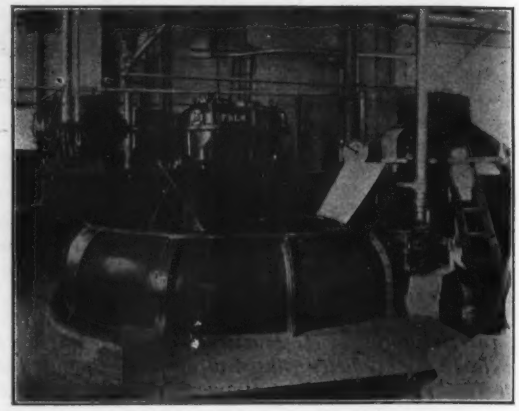


Fig. 2

The regulating mechanism will be discussed in subsequent paragraphs.

The Rotor

Concentric with, and projecting below the stator is the rotor. This element is a circular cast iron plate extending radially from near the bottom extremity of a vertical shaft which projects downward from the driving mechanism. The upper surface of the rotor is machined for attaching a ring of knives corresponding to the stator knives. Its function is the same as that of the standard type beater roll, with certain novel departures. In the first place its vertical position remains unchanged, knife clearance adjustment being accomplished by the stator. This permits the use of a positive drive. Secondly, it pulls the stock through the zone of action by the principle of the centrifugal pump, rather than the paddle-wheel or gear pump action of the ordinary beater roll. This feature makes for rapid and efficient disintegration and circulation.

The rotor shaft bears two other types of radial extension. The first is a helical fin running from top to bottom which utilizes the principle of the screw press in tearing apart the pulp lap and forcing it toward the active zone. The second is a set of agitator blades bolted near the bottom of the shaft and extending outward from the hub to within a short distance of the knives. They serve to force the stock away from the central area and into the knife zone. With this combination the stock is forced by positive action into the effective zone regardless of its state of disintegration, and is further impelled through this zone in a manner which assures rapid circulation during the entire beating cycle. Experience has shown that these features are highly successful in avoiding the accumulation of "dead stock."

It is well to point out at this time that the rotor-stator combination not only makes for increased velocity of stock, (20 per cent above that in the standard type beater) but also for a short distance of travel (33 per cent of that in the standard type beater) against a balanced head. In operation, the stock outside the stator rises only a few inches above the level of that inside, such that the two columns of liquid are essentially counterbalanced. This feature eliminates the necessity for lifting or projecting large volumes of stock and effects a proportional power saving.

Details of Construction

The stator knives are usually of cast or welded steel construction, consisting of radial blades integral with plate segments of which eight form a circle. In one design the

knives are 14 inches long. The segments are fastened to the stator by special steel bolts with flat heads which permit rapid changing. The rotor knives are similar to those of the stator with the exception that they are arranged at an angle of 20 degrees from radial, the periphery lagging behind the center. In the same design as mentioned above there are 240 stator knives of 3/8 inch thickness and 56 rotor knives 5/8 inch wide, 3 inches high, and 14 inches long. The rotor knives are fastened by a beveled steel clamp ring which gives secure fixture but permits rapid changing. Stone knives are also used as well as different designs of steel knives.

Adjustment Mechanism

The mechanism for raising and lowering the stator to control the proper adjustment of the knife clearance consists of three stainless steel screws, securely fastened to the periphery of the stator at intervals of 120 degrees. They extend through stuffing boxes in the bottom of the tub and are actuated by a chain and sprocket device connected to a motor reducer mounted on top of the beater. The motor is controlled by raising and lowering, push buttons located on the operating floor, which makes for easy and rapid manipulation of the stator setting. An indicator on a scale is mechanically geared to the adjustment device such that knife settings can be accurately duplicated. Antifrictional bearings are used throughout to insure smooth and satisfactory operation.

As a safety feature, rigid setting of the stator is avoided by applying the force on the screw adjustment through equalized coil springs located between the sprockets and the beater tub. Thus, the stator "floats" on the spring compression and can lift to permit the passage of hard masses under the knives in case such should get into the stock. Of equal importance is the fact that the flexibility of the springs, along with the three point support principle, permits the stator knife plate to find the plane of the rotor knife plate regardless of maladjustment due to wear or misalignment. There is no possibility of the condition often encountered in regular beaters where the roll sides on diametrically opposite corners of the bed-plate. These features, along with the absolutely uniform action, which is produced by the chain and sprocket device on each of the three screw adjustments, assures a more uniform distribution of pressure over the knife area.

Contrary to the condition in an ordinary beater, the weight of the element is not the primary factor in determining the pressure applied on the knives. The rotor weighs only about 30 per cent as much as a beater roll of similar capacity, and by means of this feature is avoided excessive impact due to kinetic energy imparted to a large mass when the knives are forced apart while disintegrating pulp. Naturally this makes for smooth operation and prolongs the life of the equipment.

The Driving Mechanism

The drive is mounted on a cast iron base plate supported on 18-inch channels on top of the beater. It consists of a motor coupled to a double reduction speed reducer which is in turn connected through a flexible coupling with the vertical low speed shaft. As the design of the beater permits the use of a positive drive, advantage is taken of higher efficiencies, saving of floor space and avoidance of maintenance difficulties by substituting the speed reducer for a belt drive, to produce a compact integral unit. Due to the low starting torque of the beater, squirrel cage induction motors can be used satisfactorily. The shaft is equipped with anti-friction radial and thrust bearings of ample size to take care of all load requirements.

Provisions for Dumping

The tub is equipped with a 12-inch dump valve, hydraulically operated from a control on the beater room floor. This provides for rapid and convenient emptying of the beater contents. A 6-inch washout fitting is also provided.

General Design of the Beating Mechanism

In addition to the previously mentioned features for elimination of the expenditure of power for non-essential purposes, there is incorporated in the Vortex Beater two other principles of design for accomplishing rapid and efficient beating. The first is an increase in the amount of effective surface acting on the stock during a given interval of time, and the second is an increase in the provisions for wet beating or brushing action as compared to those for cutting action. The increase in effective area is accomplished by complete immersion of the knives during the entire revolution of the rotor, a condition which differs from that of the standard beater roll. By no means is it intended to cast unfavorable reflection on the hollander type beater, but in view of the fact that the Vortex was designed with the intention of improvement over existing equipment, it is necessary to use familiar types as a basis of comparison.

We are indebted to the Appleton Machine Company for the following figures:

	2000 Pound Vortex	Hollander Beaters			
		No. 1	No. 2	No. 3	No. 4
Inch cuts per min.	20,813,184	11,491,200	11,059,200	13,649,900	9,246,000
Wet beating effect per minute	3,252,060	1,077,300	1,036,800	1,273,320	724,500

Inch cuts = (R.p.m. of roll) × (No. of roll bars) × (No. of bed-plate bars) × (Length of bars in inches)

Wet beating effect = (Total surface of the roll bars per inch) × (Total surface of the bed-plate bars per inch) × (Length of the bars in inches) × (R.p.m.)

Thus, the cutting action of the Vortex has been increased by 45 per cent over average hollander design, and the wet beating effect by 68 per cent. Also, it must be borne in mind that the frequency with which the stock is brought into the zone of action is four fold greater in the Vortex beater. This clearly illustrates what departures from regular design have been made for the purpose of increasing the rate of beating.

To illustrate the manner in which the wet beating effect has been enhanced over the cutting effect, attention is directed to the following figures which are based on those in the preceding paragraph.

	2000 Pound Vortex	Hollander Beaters			
		No. 1	No. 2	No. 3	No. 4
Ratio of wet beating to inch cuts	1:6.4	1:10.7	1:10.6	1:10.4	1:12.6

Thus the Vortex beater design has decreased cutting action as compared to wet beating effect by 42 per cent. In view of the vast difference in the manner of impelling the stock in the Vortex and hollander types, it is not to be presumed that the action actually accomplished on the fibers is necessarily in direct proportion to the inch cuts or wet beating effect in the two designs. The foregoing figures are given merely to illustrate the provisions which have been made in attempting to secure the desired effect. In the final analysis the quality of the machine must be evaluated in terms of its actual performance in service. Hence, we turn our attention to the observations and data which have been taken on actual commercial installations. Here again it is necessary to base our comparison on the performance of the familiar hollander type beaters.

Operation of the Vortex Beater

Furnishing

The Vortex beater is furnished in the usual manner, but the charge can be completed much more rapidly than

TABLE I.—COMPARISON OF POWER CONSUMPTION OF VORTEX AND HOLLANDER BEATERS

	Vortex	Hollander	
	1000 Pounds (observed)	1400 Pounds (observed)	1000 Pounds (calculated equivalent)
Filling time (minutes)	12 min.	36 min.	26 min.
Power rate during filling (kw.)	30.3	77	55
Power for filling (h.p.-hr.)	9.1	61.9	44.1
Power rate for circulation, etc. (kw.)	40	95	67.9
Power rate for beating (kw.)	35.3	42.7	30.5
Total power rate (kw.)	75.3	137.7	98.4
Time of beating (minutes)	101	126	....
Power for circulation, etc. (h.p.-hr.)	90.4	267.0	191.0
Beating (h.p.-hr.)	79.7	120.1	86.0
Total power (h.p.-hr.)	178.2	449.0	321.1
Power for filling (per cent)	4.5	13.8	
Power for circulating, etc. (per cent)	50.7	59.5	
Power for beating (per cent)	44.8	26.7	
Power saving (1000-pound basis)			
Filling (per cent)	81.7		
Circulating, etc. (per cent)	52.7		
Beating (per cent)	7.3		
Total cycle (per cent)	44.5		

with the standard type. Bear in mind that the positive screw press action prevents plugging, even with the toughest pulps; large agglomerates are torn apart before they are forced between the knives, and hence, there is no possibility of difficulty corresponding to jumping or bounding of a beater roll. A 1,500 pound Vortex beater may easily be filled with wet machine lap stock in four minutes; 50 pound bundles may be thrown in as rapidly as two operators can handle them without the slightest difficulty. Dry pulp naturally requires somewhat longer time, but by actual test 2,500 pounds of Swedish unbleached kraft (Husom) were furnished to a beater in nine minutes. The disintegration action is most rapid if dry sheets are separated into groups of about ten and supplied as rapidly as the flow carries them under the knives. However, to demonstrate the remoteness of the possibility of plugging difficulties, an entire bale of dry sulphite pulp sheets has been furnished to the beater merely with the baling wire removed. No difficulty was encountered and the pulp was finally disintegrated although the action was retarded by slow absorption of water and the inability of the helical fin rapidly to "bite" into the large surface exposed on the side of the unopened bale. Also, 400 pound bales of frozen groundwood have been charged to the beater, and rapid disintegration resulted without difficulty.

Difficulties have been encountered however, in feeding roll pulp and shredded broke. Unless suitable precautions are taken the long sheets or strips will wind around the shaft and not be disintegrated. If the use of roll pulp is deemed necessary, it can conceivably be accomplished by introducing the continuous sheet into the beater by the use of a set of small squeeze rolls, operated at a rate somewhat slower than the action of the disintegrating mechanism, so that the sheet will be torn apart by the tension between the rotor and the squeeze rolls. The shredded broke problem has been satisfactorily solved by imparting a smooth surface to the screw fin, and by introducing the material in large, loose bundles, rather than in individual strips.

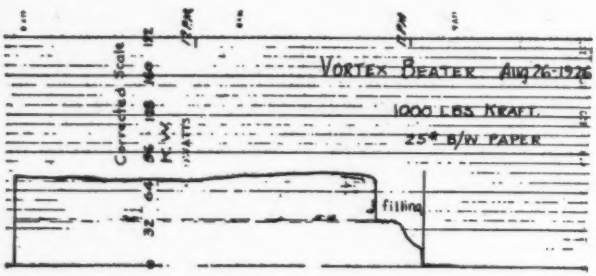


FIG. 3

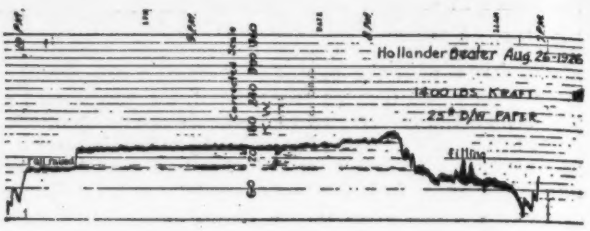


FIG. 4

POWER CONSUMPTION MEASUREMENTS

It has been mentioned previously that the Vortex beater is designed to use a larger percentage of the power input for accomplishing desirable effects than does the standard type engine. For demonstrating the extent to which this has been accomplished, a G. E. recording watt meter was placed in the motor circuit of a beater of each type and continuous readings taken during a beating cycle.

Presumably the power necessary to operate the beater with the roll or rotor separated from the bed-plate or stator is that required for circulating, etc., while the excess power required to apply knife pressure is essentially that used for refining stock.

Figs. 3 and 4 are respectively the power consumption curves for a beating cycle of a 1,000 pound Vortex and a 1,400 pound hollander type. The same lot of dry kraft pulp was used in each beater and it was refined for production of the same type of paper on the same machine. Reading values graphically from the curves, we arrive at the analysis given in Table I.

The data illustrate wherein the Vortex serves as a more efficient beating engine than the standard type beater; while exerting approximately the same amount of power on the stock, it uses less than 50 per cent as much for circulating etc., and less than 20 per cent for filling, as compared to the hollander.

BEATER TESTS

Five comparative beater tests are given below in which

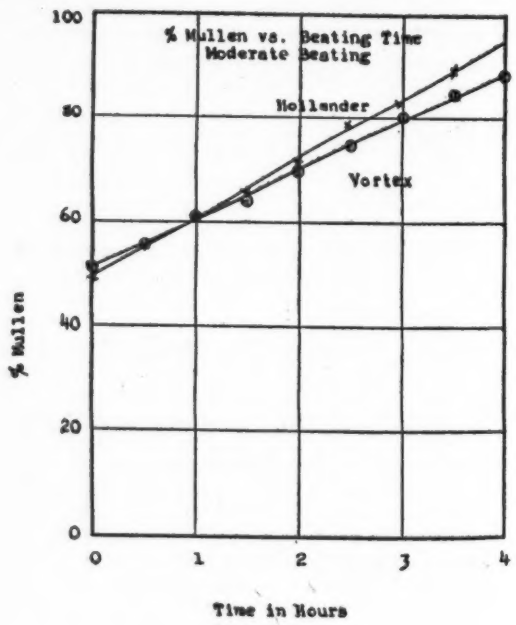


FIG. 5

three different beaters were used, one hollander type and two Vortex beaters.

The hollander beater is of a well recognized make, is in good mechanical condition, and has been found very satisfactory as a stock refiner. It is felt that it gives considerably better than average results for the hollander type. It has relatively broad steel knives and a granite bed-plate. The dimensions are as follows:

Hollander beater	
Roll	60 inches diameter by 61 inches
Speed	153 r.p.m.
Knives	
Number	47
Width	¾ inch
Depth	2 inches
Center to center	4 inches
Granite Bed-plate	
16 inches x 59 inches	
7 rows of slots parallel with knives	
Slots	5 inches x ¾ inch (½ inch deep), 2½ inches between ends of slots
Capacity	1500 pounds
Steel filled Vortex	
Speed	75 r.p.m.
Rotor knives	
Number	56
Length	14 inches
Width	⅝ inch
Stator knives	
Number	240
Length	14 inches
Width	⅜ inch
Capacity	1500 pounds
Stone filled Vortex	
Speed	76 r.p.m.
Rotor knives	
Number	24
Length	9½ inches
Width	3½ inches
Stator plate	
Annular ring	
Circumference	231 inches
Width of ring	9¼ inches
8 plate segments	
150 radial slots	¼ x ¼ x 9¼ inches
8 plate divisions	
Capacity	1500 pounds

The beaters compare as follows:

	Inch Cuts per Minute	Wet Beating Effect
Hollander	2,408,000	3,975,000
Steel filled vortex	14,110,000	3,308,000
Stone filled vortex	2,668,000	9,600,000

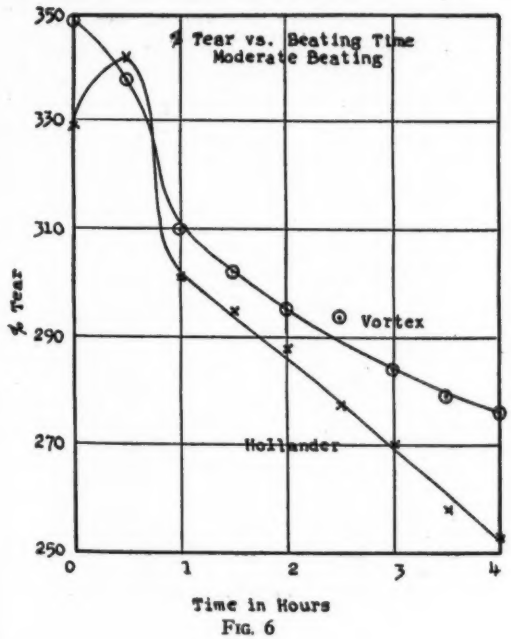


FIG. 6

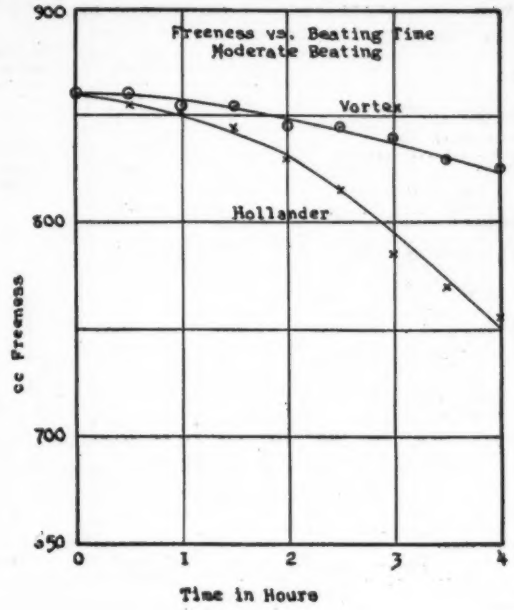


FIG. 7

Test I (moderate beating)

In the first comparative tests the stone filled Vortex and the hollander were operated for moderate beating with the power rates adjusted to give approximately the same rate of mullen strength development. The Vortex required a considerably lower power rate. The pulp charged to the beater was identical, but different amounts were furnished to the two engines. The data are given in Table II, and are graphically presented in Figs. 5 to 8.

The per cent mullen refers to pop tests taken on test sheets made on a Valley Iron Works sheet mould to 40 pound basis ream weight of 24x36—480 and reported as points mullen expressed as percentages of the ream weight. The per cent tear refers to Elmendorf tearing tests on the same sheets with grams tear for 16 sheets expressed as

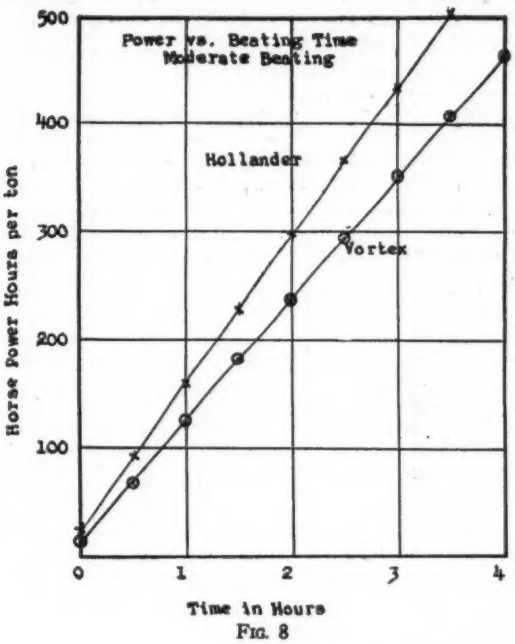


FIG. 8

TABLE II.—BEATER TEST I (MODERATE BEATING)

Stone filled Vortex beater	
Charge	2800 pounds unbleached kraft, 40 per cent air-dry
Filling time	6 minutes
Time from beginning of filling to roll setting	17 minutes
Horsepower consumed during filling	7.26 h.p. hours
Power rate during beating	62.70 h.p.
Hollander beater	
Charge	3600 pounds unbleached kraft, 40 per cent air-dry. Identical pulp as charged to Vortex.
Filling time	12 minutes
Time from beginning of filling to roll setting	23 minutes
Horsepower consumed during filling	17.82 h.p. hours
Power rate during beating	99.00 h.p.

Beating Time Hours	Mullen (per cent)		Tear (per cent)		Freeness (cc.)		H.p. Hours		Cumulative H.p. Hours per Ton	
	Vortex	Hollander	Vortex	Hollander	Vortex	Hollander	Vortex	Hollander	Vortex	Hollander
0	50.1	48.5	349	329	860	860	7.26	17.82	13.08	24.88
½	55.8	56.0	338	342	860	855	34.48	66.07	68.3	91.7
1	60.8	61.2	310	301	855	853	69.70	114.97	125.0	159.6
1½	64.8	65.6	302	295	855	845	100.92	164.57	181.8	228.7
2	70.5	71.8	295	288	845	830	131.72	214.84	237.3	298.1
2½	76.4	79.6	294	277	845	815	163.33	264.44	294.2	367.1
3	80.2	83.8	284	270	840	785	194.94	314.04	251.2	436.2
3½	84.1	89.8	279	258	830	770	226.16	363.64	407.9	505.0
4	88.0	94.6	276	253	825	755	257.77	412.54	464.2	572.8

Dumping time:		
Vortex	6.7 minutes	
Hollander	7.0 minutes	
Power consumed during dumping:		
Vortex	2.90 H.p. hours,	5.2 H.p. hours per ton
Hollander	7.10 H.p. hours,	9.9 H.p. hours per ton
Consistencies:		
Vortex	6.19 per cent	
Hollander	4.61 per cent	

TABLE III.—MODERATE BEATING

For Mullen Development of (per cent)	Tear, (per cent)		Freeness, (c.c.)		Cumulative H.p. Hours Per Ton Including Filling and Dumping		Power Saved Vortex (per cent)
	Vortex	Hollander	Vortex	Hollander	Vortex	Hollander	
Initial	349.0(?)	329.0(?)	860	860	18.3	34.8	47.5
60	314.0	310.0	855	853	120.2	151.9	21.9
65	303.0	295.5	855	846	182.2	226.9	19.8
70	295.5	289.6	845	834	236.2	286.9	17.7
75	291.0	283.0	845	824	285.2	334.9	14.8
80	284.0	276.5	840	810	355.2	381.2	7.0
85	278.5	268.0	829	781	422.2	459.9	8.2
90	274.0	258.0	821	765	495.2	514.9	3.8

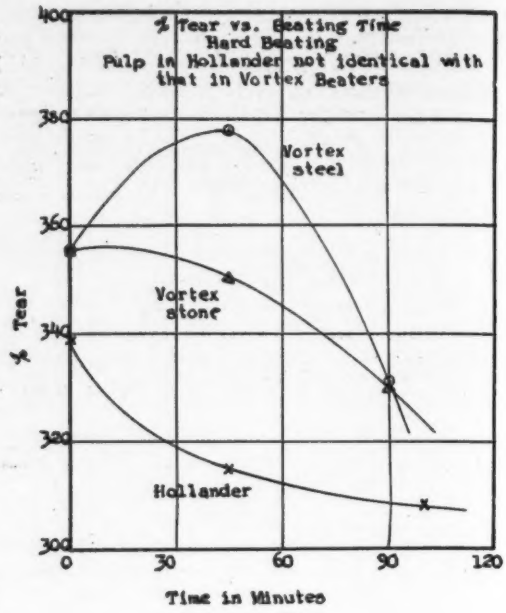


FIG. 10

percentage of the ream weight. The freeness (in c.c.) refers to the results of standard Schopper-Riegler freeness tests. Power data were taken as kilowatt hours and converted to the horsepower basis; the final conversion of power figures was made on the basis of air-dry tons of stock in each beater.

It is to be observed that while the test was intended to produce development of mullen at the same rate, the conditions were such that actually the hollander beater was developing somewhat faster. For this reason Table III has been prepared by reading graphically from the plotted

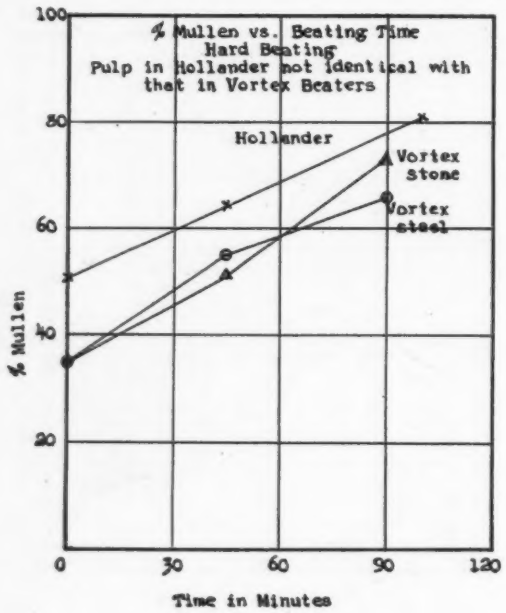


FIG. 9

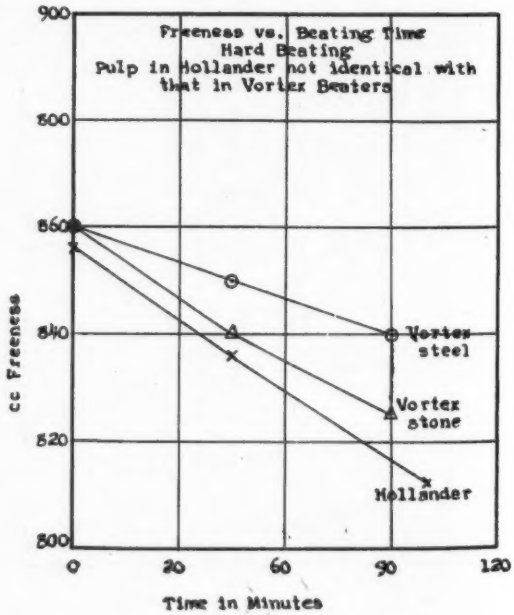


FIG. 11

TABLE V.—HARD BEATING

For Increase in per cent Mullen of	Time Required, min.		Decrease in per cent Tear		Decrease in Freeness (cc.)		H.P. Hours per ton		Per Cent Saving by Vortex (stone)	
	Vortex stone	Hollander	Vortex stone	Hollander	Vortex stone	Hollander	Vortex stone	Hollander	Time	Power
10	28.5	32.5	3.1	17.2	10.2	15.5	52.0	93.0	12.6	44.1
20	54.0	65.0	8.9	26.7	19.8	28.0	98.0	187.0	16.9	47.5
25	64.0	81.0	13.3	28.8	24.0	36.4	116.0	232.0	21.0	50.0
30	73.0	89.0	17.2	30.8	27.8	43.0	132.0	280.0	25.5	52.8
35	83.0	115.0	21.7	33.1	32.3	51.5	150.0	328.0	27.8	54.2

Note: The values for 35 per cent increase in mullen required extrapolation of the curves for the hollander beater.

TABLE VI.—HARD BEATING

For Increase in per cent Mullen of	Time in min.		Change in per cent Tear		Decrease in Freeness (cc.)		H.P. Hours per ton		Per Cent Saving by Vortex (steel)	
	Vortex steel	Hollander	Vortex steel	Hollander	Vortex steel	Hollander	Vortex steel	Hollander	Time	Power
10	23.0	32.5	+11.5	—17.2	4.0	15.5	42.0	93.0	29.2	54.9
20	45.0	65.0	+23.0	—26.7	10.0	28.0	81.2	187.0	30.8	56.6
25	65.0	81.0	+ 7.0	—28.8	14.5	36.4	118.0	232.0	19.7	49.1
30	85.0	98.0	—18.0	—30.8	19.2	43.0	157.0	280.0	13.3	43.9
35	117.0	115.0	—40.0	—33.1	24.3	51.5	193.0	328.0	—1.7	41.1

Note: The values for 35 per cent increase in mullen required extrapolation of the curves for the both beaters.

TABLE VII.—COMPARISON OF VORTEX BEATERS

Mullen Per Cent	Tear Per Cent		Freeness (cc.)		H.P. Hours per Ton		Beating Time in Minutes	
	Steel	Stone	Steel	Stone	Steel	Stone	Steel	Stone
45	366.5	351.9	856.0	849.8	43.0	52.0	23.0	28.5
55	378.0	346.1	850.0	840.2	81.2	98.0	45.0	54.0
60	362.0	341.7	845.5	836.0	118.0	116.0	65.0	64.0
65	337.0	337.8	840.8	832.2	157.0	132.0	85.0	73.0
70	315.0	333.3	835.7	827.7	193.0	150.0	117.0	83.0

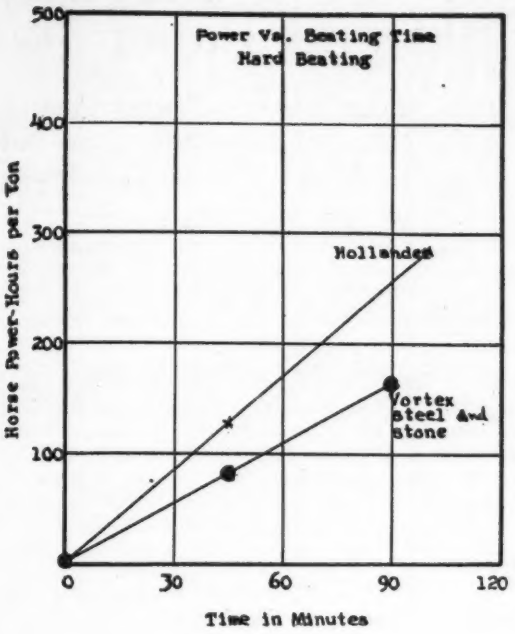


FIG. 12

data the values corresponding to equal mullen developments.

Thus with conditions of moderate beating and approximately the same rate of mullen development the stone filled Vortex produces a stock with higher tear and freeness values than the hollander. The power consumption for the Vortex is lower in all cases with the percentage saving decreasing for greater mullen development.

Test II (hard beating)

In view of the fact that experience has shown that hard beating effects a reduction of power consumption for a given development, tests were made comparing the hollander with the stone filled Vortex and the steel filled Vortex, each operated at highest efficiency. The results are given in Table IV and are presented graphically in Figs. 9 to 12.

To take into account the difference in the initial conditions of the pulps, a comparison may be made in which change from the initial condition of the stock effected by each beater is taken as the basis. Table V was prepared by reading values graphically from the plotted data.

A similar comparison for steel fillings may be made by considering equal changes in mullen from initial conditions. Table VI was prepared by reading values from the graphs.

It is interesting to observe that the percentage power saving effected by the Vortex increases with prolonged beating for stone fillings, and decreases with prolonged beating with steel knives. The data indicate that steel is most suitable for short beating cycles and lava for prolonged beating.

Comparison of the strength characteristics bears out the same conclusion, as may be seen from Table VII.

This is an indication of the flexibility which may be obtained with the Vortex by changing tackle. There remains much to learn concerning the performance of this beater for it is a relatively new development and has not yet been in use for a sufficient time to explore completely its range of possibilities. Its action differs from other beater designs by such an extent that it is difficult to transfer empirical principles from one type to the other, and it has been necessary to start all investigation from the beginning. Experiments are at present contemplated, or in actual progress, for determining the action of various knife designs; for instance, knives set at an angle with the vertical, knives with the periphery leading the center rather than lagging, and a set of knives operating on a flat plate rather than on stator knives. The design of the beater is such that it is relatively inexpensive and convenient to change the type of filling, which leaves the way open for experimentation in adapting the action to obtain optimum results and permits a wide range of flexibility to meet any particular set of mill conditions.

TABLE IV.—BEATER TEST II (HARD BEATING)

Vortex beater (Both types of filling) Charge	3600 pounds unbleached kraft, 40 per cent air-dry. (Identical in both Vortex beaters)
Rate of power consumption during beating	78.1 h.p. (Limited by motor capacity)
Hollander beater Charge	3600 pounds unbleached kraft, 40 per cent air-dry (Not identical pulp as charged to Vortex beaters).
Rate of power consumption during beating	123.2 h.p. (Limited by bearing pressure).

Beating Time, Minutes	Mullen (per cent)			Tear (per cent)			Freeness (c.c.)			Cumulative Power for Beating Only		Cumulative Power per Ton	
	Vortex			Vortex			Vortex			Vortex			
	Steel	Lava	Hollander	Steel	Lava	Hollander	Steel	Lava	Hollander	Stone Steel	Hollander	Vortex	Hollander
0	35.0	35.0	50.5	355	355	339	860	860	856	0.0	0.0	0.0	0.0
45	55.0	51.0	64.5	378	350	315	850	840	836	58.5	92.5	81.2	128.4
90	66.0	73.0	...	331	330	...	840	825	...	117.0	.....	162.4	.....
100	...	...	81.1	...	...	308	...	...	812	....	205.3	....	285.0

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Machinery

Strainer for Pulp Digesters. Herbert W. Guettler and Clarence J. Christiansen, assignors to Fibre Making Processes, Inc. U. S. pat. 2,062,127 (Nov. 24, 1936).—The strainer used to prevent chips from being drawn into the liquor-circulating pump is substantially horizontal and of triangular cross section, the base of the triangle being vertical and close to the inner wall of the digester. The strainer is built in sections placed in endwise alignment and opening into one another, each section being supported at a point approximately midway of its length. Means are provided for allowing for expansion and contraction while at the same time preventing the contents of the digester entering between the sections.—A.P.-C.

Screen. Frederick E. Palmer assignor to Sherbrooke Machineries, Ltd. U. S. pat. 2,056,310 (Oct. 6, 1936).—The invention provides improvements in screens of the type disclosed in Haug's U. S. pat. 1,172,239 and Reed and Spafford's U. S. pat. 1,714,047. The modified construction provides for delivering the stock into the screening chamber and against the screen in such a manner that a smooth but forceful delivery of the stock into the screening chamber is effected without unnecessary power consumption or turbulence.—A.P.-C.

Two-Stage Gravity Flow Wet End Paper Making Machine. Gerould T. Lane and Wendell Butterfield, assignors to Eastman Kodak Co. U. S. pat. 2,046,270 (June 30, 1936).—The sheet is formed by depositing the fibers on a wire travelling around the greater portion of a cylinder mold. The wire leaves the machine in a substantially horizontal direction, and the level of the stock is higher than the top of the making wire.—A.P.-C.

Joint for Wire Fabric. Fred Crossman assignor to The Lindsay Wire Weaving Co. U. S. pat. 2,061,454 (Nov. 17, 1936).—A relatively thin flat ribbon of nonfusible metal, with a layer of fusible metal embracing one edge and the two sides of the ribbon, is placed between the ends of the wire fabric to be joined, and heat is applied while the ends are being pressed towards each other. —A.P.-C.

Supercalender. Charles P. Putnam, Earl E. Berry and Lloyd Hornbostel, assignors to Beloit Iron Works. U. S. pat. 2,058,352 (Oct. 20, 1936).—The invention provides improved means for: (1) supporting the rolls whereby to eliminate at least a part of the uneven calendering of the sheet across its width caused by localized heating resulting in uneven expansion of the rolls; (2) bringing the surface irregularities of adjacent rolls out of coincidence; (3) supporting and maintaining the rolls in alignment; (4) permitting of operating at higher speeds; (5) controlling the application of pressure to the rolls; (6) applying pressure to each end of the rolls independently of the other end; (7) controlling the pressure-apply mechanism; (8) separating the rolls and bringing them into contact; (9) preventing the rolls from being left with the pressure on when the machine stops; (10) indicating the amount of pressure applied to each end of the rolls; (11) tensioning the sheet so that, after a break between the stack and the unwinding mechanism, the tension is maintained on the sheet.—A.P.-C.

Suction Boxes for Paper Making Machines. James R. Happer, Brit. pat. 448,291 (June 5, 1936).—The boxes have in contact with the undersurface of the traveling wire cloth a surface of hard rock or igneous material, e.g., granite, marble, slate and a surface of fibrous material, e.g., wood, to minimize friction and wear while insuring air tightness.—A.P.-C.

Paper Machine Control. Richard T. Lang assignor to American Voith Contact Co. Can. pat. 360,359 (Sept. 8, 1936).—Structural details are described of a fourdrinier machine in which the upper border of the stock flowing from the inner part of the stock container to the discharge opening is guided and moves in an undisturbed and smooth manner at any cross section of the discharge or at any angle.—A.P.-C.

Rubber-Covered Suction Rolls for Use in Paper Manufacture. George R. Keltie. Brit. pat. 448,660 (June 12, 1936).—In re-covering rubber-covered suction-roll shells, after applying the rubber and the vulcanizing tape in the usual manner, headed pins of sufficient length to pass completely through the covering are driven through it through the holes in the metal shell, the pins being inserted from inside the shell. After vulcanizing, the pins are readily knocked inwards.—A.P.-C.

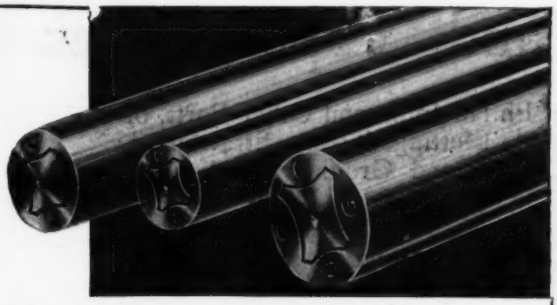
Mandrel for Paper Winding Cores. Jules Petit et Fils. Fr. pat. 804,565.—The ends of the mandrel are provided with a metal sleeve having a square hole in which fits the end of the driving shaft, and the walls of this hole are inclined slightly relatively to the axis of the mandrel so that the end of the driving shaft will easily be placed in position.—A.P.-C.

Stepless Chain Drives. Papier-Fabr. 34, no. 37-342-343 (Sept. 13, 1936).—Reference is made to stepless chain gears for sensitive machinery, where jerkless changing from one speed to another is important.—C.J.W.

Chain Drives in Paper Making. Reginald Trautschold. Paper Trade J. 03, No. 18: 93-99 (Oct. 29, 1936).—A discussion of the merits of silent and roller chain applications.—A.P.-C.

Review of the Paper Industry. Curt Cedercreutz. Finnish Paper and Timber J. 18, no. 14:701-702, 704, 706, 708; no. 15: 744, 746, 748, 750-751 (July 31, Aug. 15, 1936).—The author reviews important developments of the paper industry, such as sizing methods (Bennett and Gillet, in particular), the Thorsen-Héry beater, different types of wire shakes, Wallquists' system for distributing the fibers uniformly upon the wire, compressed air for weighting of rolls, rubber-covered table rolls, save-alls, etc.—C.J.W.

Laminated Plastics in Industry. Modern Plastics 14, no. 2:228-230, 232, 234 (Oct., 1936).—The article discusses the application of paper-base laminated plate to various machinery sections, with special reference to uses in the paper industry, such as suction box covers, doctor blades, table rolls, gears, etc.—C.J.W.



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NEW YORK IMPORTS

WEEK ENDING JUNE 5, 1937

SUMMARY

Cigarette paper .....957 cs.
Wall paper .....1 ble., 14 bxs., 8 cs.
Newsprint .....10,303 rolls
Printing paper .....25 rolls, 95 cs.
Wrapping paper ..... 24 bls.
Filter paper .....5 cs.
Filter mass .....100 bls.
Drawing paper ..... 3 cs.
Surface coated paper .....73 crates, 124 cs.
Metal coated paper ..... 42 cs.
Basic paper ..... 33 cs.
Tissue paper ..... 27 cs.
Decalcomania paper ..... 52 cs. (duplex)
Decalcomanias ..... 22 cs.
Transfer paper ..... 4 cs.
Colored paper ..... 3 cs.
Bowl paper ..... 10 bls.
Writing paper ..... 22 cs.
Paper tubes ..... 169 crates, 34 pkgs.
Card board ..... 28 rolls
Wall board .....1,180 bdls.
Straw boards ..... 1,756 rolls
Miscellaneous paper .....247 cs.

CIGARETTE PAPER

Standard Products Corp., *Normandie,* Havre, 91 cs.
American Tobacco Co., *Schodack,* Bordeaux, 359 cs.
Champagne Paper Corp., *Schodack,* Bordeaux, 92 cs.
Champagne Paper Corp., *Pr. Roosevelt,* Havre, 240 cs.
De Mauduit Paper Corp., *Pr. Roosevelt,* Havre, 175 cs.

WALL PAPER

——, *Europa,* Bremen, 1 cs., 1 ble.
Rohner Gehrig & Co., *Bergensfjord,* Hagastrom, 14 bxs.
——, *Pr. Roosevelt,* Havre, 7 cs.

NEWSPRINT

News Syndicate Co., *G. T. D.,* Gatineau, 295 rolls.
N. Y. Evening Journal, *Markland,* Liverpool, N. S., 525 rolls.
N. Y. Tribune, *Markland,* Liverpool, N. S., 1631 rolls.
World Telegram, *Markland,* Liverpool, N. S., 306 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 485 rolls.
Westchester Newspapers, *Markland,* Liverpool, N. S., 48 rolls.
Parsons & Whittemore, Inc., *Markland,* Liverpool, N. S., 910 rolls.
——, *Bergensfjord,* Oslo, 193 rolls.
H. G. Craig Co., *Kermic,* Donnacona, 301 rolls.
Wilkinson Bros. & Co., Inc., *Scanstates,* Kotka, 99 rolls.
Lunham & Reeve, Inc., *Scanstates,* Kotka, 262 rolls.
N. Y. Evening Journal, *Scanstates,* Kotka, 502 rolls.
International Paper Co., *Arizpa,* Dalhousie, 2490 rolls.
International Paper Sales Co., *Arizpa,* Dalhousie, 647 rolls.
News Syndicate Co., *International No. 1,* Gatineau, 312 rolls.
Jay Madden Corp., *Columbus,* Bremen, 243 rolls.
Jay Madden Corp., *Hamburg,* Hamburg, 208 rolls.
Perkins Goodwin & Co., *Hamburg,* Hamburg, 76 rolls.
Jay Madden Corp., *Pr. Roosevelt,* Hamburg, 123 rolls.
Parsons & Whittemore, Inc., *Pr. Roosevelt,* Hamburg, 332 rolls.
N. Y. Evening Journal, *Pr. Roosevelt,* Hamburg, 315 rolls.

PRINTING PAPER

F. C. Strype, *Edam,* Rotterdam, 77 cs., 25 rolls.
Steiner Paper Corp., *Konigstein,* Antwerp, 10 cs.
Japan Paper Co., *Pr. Roosevelt,* Havre, 8 cs.

WRAPPING PAPER

——, *Edam,* Rotterdam, 24 bls.

FILTER PAPER

H. Reeve Angel & Co., Inc., *American Farmer,* London, 5 cs.

FILTER MASS

A. W. Fenton Co., Inc., *Columbus,* Bremen, 100 bls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., *American Farmer,* London, 3 cs.

SURFACE COATED PAPER

L. A. Consmiller, *Europa,* Bremen, 46 cs.
Gevaert Co. of America, *Mercier,* Antwerp, 78 cs.
Globe Shipping Co., *Columbus,* Bremen, 73 crates.

METAL COATED PAPER

K. Pauli Co., *Columbus,* Bremen, 42 cs.

BASIC PAPER

Globe Shipping Co., *Columbus,* Bremen, 33 cs.

TISSUE PAPER

Van Oppen & Co., *Pr. Harrison,* Genoa, 27 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Laconia,* Liverpool, 52 cs. (duplex).

DECALCOMANIAS

Sellers Transportation Co., *Europa,* Bremen, 6 cs.
Sellers Transportation Co., *Columbus,* Bremen, 16 cs.

TRANSFER PAPER

D. C. Andrews & Co., *Hamburg,* Hamburg, 4 cs.

COLORED PAPER

C. Ashe & Co., *Black Condor,* Rotterdam, 3 cs.

BOWL PAPER

Hurley Johnson Corp., *Laconia,* Liverpool, 10 bls.

WRITING PAPER

Globe Shipping Co., *Aquitania,* Southampton, 22 cs.

PAPER TUBES

——, *Columbus,* Bremen, 169 crates, 34 pkgs.

CARD BOARD

——, *Black Condor,* Rotterdam, 28 rolls.

WALL BOARD

Treetex Corp., *Argosy,* Ornskoldsvik, 1180 bdls.

STRAW BOARDS

A. Vuyk, *Black Hawk,* Rotterdam, 144 rolls.
——, *Black Hawk,* Rotterdam, 172 rolls.
Balfour Guthrie & Co., *Edam,* Rotterdam, 1440 rolls.

MISCELLANEOUS PAPER

Coty Processing Co., *Normandie,* Havre, 6 cs.
——, *Normandie,* Havre, 8 cs.
R. Wilson Paper Corp., *California,* Glasgow, 10 cs.
International F'd'g Co., *Mercier,* Antwerp, 8 cs.
J. H. & G. B. Siebold, *Pr. Taft,* Hong Kong, 14 cs.
American Medical Specialties, *Pr. Taft,* Kobe, 4 cs.
Japan Paper Co., *Pr. Taft,* Kobe, 85 cs.
Japan Paper Co., *Tasmania,* Kobe, 58 cs.
Keuffel & Esser Co., *Hamburg,* Hamburg, 43 cs.
Wilkinson Grey & Co., *Pr. Harrison,* Genoa, 11 cs.

RAGS, BAGGINGS, ETC.

——, *Laconia,* Liverpool, 44 bls. rags.
E. Butterworth & Co., Inc., *American Importer,* Manchester, 54 bls. paper stock.
——, *American Importer,* Manchester, 150 bls. paper stock.
Royal Manfg. Co., *American Importer,* Manchester, 61 bls. cotton waste.
D. Benedetto, Inc., *Black Hawk,* Rotterdam, 147 bls. bagging.
——, *Black Hawk,* Rotterdam, 11 bls. rags.
G. M. Graves Co., Inc., *California,* Glasgow, 86 bls. bagging.
Manufacturers Trust Co., *Mercier,* Antwerp, 6 bls. rags.
D. Benedetto, Inc., *Artigas,* Leith, 77 bls. bagging.
——, *Artigas,* Dundee, 116 bls. paper stock.
E. J. Keller Co., Inc., *Artigas,* ——, 59 bls. bagging.
Herman Pack Co., *Edam,* Rotterdam, 60 bls. bagging.
Great Eastern Packing & Paperstock Corp., *Edam,* Rotterdam, 73 bls. bagging.

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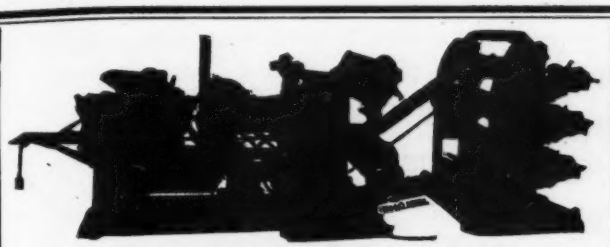

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E. J. Keene, *Schodack*, Bordeaux, 56 bls. rags.
J. R. Keene, *Schodack*, Bordeaux, 35 bls. rags.
D. Benedetto, Inc., *Schodack*, Bordeaux, 268 bls. rags.
Castle & Overton, Inc., *Schodack*, Bordeaux, 179 bls. rags.
Keene, Inc., *Schodack*, Bordeaux, 120 bls. rags.
Banco Coml Italiane Trust Co., *Konigstein*, Antwerp, 183 bls. flax waste.
Chase National Bank, *Konigstein*, Antwerp, 113 bls. jute waste.
Philadelphia National Bank, *Konigstein*, Antwerp, 107 bls. rags, 111 bls. bagging.
———, *Konigstein*, Antwerp, 111 bls. bagging.
New England Waste Co., *Tasmania*, Shanghai, 233 bls. pickers.
O. Smith & Sons Co., *Tasmania*, Shanghai, 100 bls. cotton waste.
New England Waste Co., *Tasmania*, Kobe, 100 bls. cotton waste.
Guaranty Trust Co., *Tasmania*, Kobe, 50 bls. rags.
———, *Hamburg*, Hamburg, 216 bls. rags, 117 bls. cotton waste.
Banco Coml Italiane Trust Co., *Pr. Roosevelt*, Hamburg, 383 bls. rags.
———, *Pr. Roosevelt*, Havre, 14 bls. rags.
S. Shapiro & Sons, *Scanstates*, Copenhagen, 3 bls. rags.
Darmstadt Scott & Courtney, *Scanstates*, Copenhagen, 4 bls. rags.
E. J. Keller Co., Inc., *Maasdam*, ———, 58 bls. bagging.
E. J. Keller Co., Inc., *Noto Maru*, ———, 200 bls bagging.
E. J. Keller Co., Inc., *Exchange*, ———, 26 bls. paper stock.
E. J. Keller Co., Inc., *Vincent*, ———, 42 bls. paper stock

GLUE STOCK, ETC.

Irving Trust Co., *Hamburg*, Hamburg, 380 bls. glue stock.
———, *Vulcania*, Trieste, 200 bags bone glue.
———, *Vulvania*, Trieste, 300 bags ground glue.

OLD ROPE

Irving Trust Co., *Artigas*, Leith, 60 bls.
W. Steck & Co., *Edam*, Rotterdam, 74 coils.
Banco Coml. Italiane Trust Co., *Black Condor*, Rotterdam, 43 coils.
W. Steck & Co., *Black Condor*, Rotterdam, 40 coils.
Irving Trust Co., *Schodack*, St. Nazaire, 16 bls., 205 rolls.
Brown Bros. Harriman & Co., *Pr. Roosevelt*, Southampton, 51 coils.

CHINA CLAY

English China Clay Sales Corp., *Laconia*, Liverpool, 140 bags.

WOOD PULP

Perkins Goodwin & Co., *Pilsudski*, Gdynia, 2300 bls. wood pulp, 369 tons.
Chemical Bank Trust Co., *Bergensfjord*, Oslo, 600 bls. sulphite.
J. Andersen & Co., *Bergensfjord*, Oslo, 2500 bls. sulphite.
Irving Trust Co., *Bergensfjord*, Oslo, 500 bls. chemical pulp.
Perkins Goodwin & Co., *Bergensfjord*, Mjondalen, 250 bls. sulphite.
Irving Trust Co., *Baghdad*, Hamburg, 1050 bls. wood pulp.
Lagerloef Trading Co., *Scanstates*, Helsingfors, 260 bls. mechanical pulp, 52 tons.
Lagerloef Trading Co., *Scanstates*, Kotka, 910 bls. knotter sulphate, 172 tons; 4377 bls. sulphite, 873 tons.
Bulkley Dunton Pulp Co., *Edam*, ———, 420 bls. wood pulp.
Absorbo Beer Pad Co., *Vulcania*, Trieste, 523 bls. wood pulp.
Pagel Horton & Co., Inc., *Argosy*, Ornskoldsvik, 4020 bls. sulphite, 650 tons.
———, *Argosy*, Ornskoldsvik, 918 bls. chemical pulp, 150 tons.
Gottesman & Co., Inc., *W. A. McKenney*, Sweden, 5430 bls. wood pulp.

WOOD PULP BOARDS

Jay Madden Corp., *Scanstates*, Kotka, 317 bls., 82 rolls.

NEWARK IMPORTS

WEEK ENDING JUNE 5, 1937

H. G. Craig Co., *Newscarrier*, Donnacona, 246 rolls newsprint.
H. G. Craig Co., *Donpaco*, Donnacona, 330 rolls, 11 pkgs.

PORTLAND IMPORTS

WEEK ENDING JUNE 5, 1937

Gottesman & Co., Inc., *Scanyork*, Finland, 762 bls. wood pulp.
Pagel Horton & Co., Inc., *Nirrabooka*, Sweden, 1200 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JUNE 5, 1937

International Paper Sales Co., *Arizpa*, Cornerbrook, 2693 rolls newsprint.
———, *Edam*, Rotterdam, 116 bls. wood pulp boards.
International Purchasing Co., *Black Condor*, Rotterdam, 100 coils old rope.
Brown Bros. Harriman & Co., *Black Condor*, Rotterdam, 164 coils old rope.
———, *Black Condor*, Rotterdam, 95 bls. bagging, 8 bls. rags.
E. J. Keller Co., Inc., *Black Condor*, ———, 52 bls. bagging.
International Purchasing Co., *Black Condor*, Antwerp, 60 coils, old rope.
American Express Co., *Black Condor*, Antwerp, 532 rolls wrapping paper.
E. Butterworth & Co., Inc., *Black Condor*, Antwerp, 58 coils old rope.
Royal Manfg. Co., *Black Condor*, Antwerp, 29 bls. cotton waste.
———, *Tasmania*, Shanghai, 254 bls. cotton waste.
Gottesman & Co., Inc., *Mirrabooka*, Sweden, 3590 bls. wood pulp.
Pagel Horton & Co., Inc., *Mirrabooka*, Sweden, 1455 bls. wood pulp.
Price & Pierce, Ltd., *Mirrabooka*, ———, 612 bls. unbleached sulphite.
E. J. Keller Co., Inc., *Excambion*, ———, 50 bls. paper stock.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 5, 1937

———, *Artigas*, Hamburg, 15 bls. rags.
———, *Artigas*, Leith, 136 bls. bagging.
———, *Artigas*, Dundee, 24 bls. paper stock.
E. J. Keller Co., Inc., *Edam*, ———, 44 bls. rags.
E. J. Keller Co., Inc., *Schodack*, ———, 825 bls. rags.
Union Waste Co, *Schodack*, Bordeaux, 60 bls. rags.
Treetex Corp., *Argosy*, Ornskoldsvik, 1935 bdls. wall boards.
———, *Argosy*, Ornskoldsvik, 1836 bls. chemical pulp, 300 tons.
Lagerloef Trading Co., *Argosy*, Helsingfors, 520 bls. mechanical pulp, 104 tons.
J. W. Hampton Jr. & Co., *Argosy*, Helsingfors, 923 rolls newsprint.
E. J. Keller Co., Inc., *Black Eagle*, ———, 46 bls. paper stock.

BALTIMORE IMPORTS

WEEK ENDING JUNE 5, 1937

Castle & Overton, Inc., *Black Hawk*, Rotterdam, 335 bls. wood pulp, 67 tons.
W. Steck & Co., *Black Hawk*, Rotterdam, 70 coils old rope.
Castle & Overton, Inc., *Black Hawk*, Antwerp, 282 bls. rags.
Congoleum Nairn Co., *Schodack*, Havre, 137 bls. rags.
Congoleum Nairn Co., *Schodack*, St. Nazaire, 87 bls. rags.
Congoleum Nairn Co., *Schodack*, Bordeaux, 658 bls. rags.
Pagel Horton & Co., Inc., *Argosy*, Husum, 4144 bls. sulphate, 670 tons.
———, *Argosy*, Husum, 2969 bls. chemical pulp, 485 tons.
Lagerloef Trading Co., *Argosy*, Helsingfors, 1921 bls. mechanical pulp, 344 tons.
Gottesman & Co., Inc., *Bockenheim*, Sweden, 1500 bls. wood pulp.
Gottesman & Co., Inc., *Blankaholm*, Sweden, 3900 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JUNE 5, 1937

N. Y. Trust Co., *Black Hawk*, Rotterdam, 198 bls. bagging.

CHARLESTON IMPORTS

WEEK ENDING JUNE 5, 1937

E. J. Keller Co., Inc., *Tulsa*, ———, 75 bls. bagging.

NEWPORT NEWS IMPORTS

WEEK ENDING JUNE 5, 1937

Price & Pierce, Ltd., *Bockenheim*, ———, 150 bls. unbleached mechanical pulp; 2370 bls. unbleached sulphite.

MONTREAL IMPORTS

WEEK ENDING JUNE 5, 1937

Gottesman & Co., Inc., *Tyrifjord*, Sweden, 26,800 bls. wood pulp.

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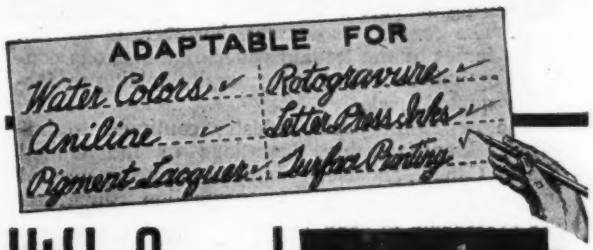

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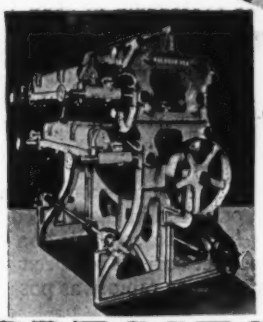

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 9, 1937.

Trading in the local paper industry was rather listless during the past week, as usual at this time of the year. The contract movement, however, is normal. Sales forces of the leading paper organizations continue optimistic. Prices are generally holding to formerly quoted levels.

The newsprint paper industry continues to improve. Manufacturing operations in the United States, Canada and Newfoundland are being speeded up to take care of current consumption. Shipments are proceeding in good volume.

Conditions in the fine paper market are moderately active. Demand for pulp, cover, bond and ledger papers is very well maintained. Tissues are going forward freely. The coarse paper market is strong and kraft specialties are going forward freely.

Mechanical Pulp

The ground wood pulp market continues steady. Production in the United States, Canada and abroad is keyed to consumption as far as possible in order to meet current requirements. Contract shipments are moving as rapidly as possible. Prices continue steady.

Chemical Pulp

Paper mill demand for various varieties of chemical pulp is quite up to average. Demand for bleached sulphite pulp is persistent. Recent advanced quotations on several of the grades are maintained, especially for bleached kraft and bleached soda.

Old Rope and Bagging

The old rope market is slightly softer. Demand for domestic and imported old manila rope is regular. Small mixed rope is moving slowly. The bagging market is irregular. Demand for both domestic and imported gunny and scrap bagging is less busy.

Rags

For the time being listlessness prevails in the domestic rag market. The demand for old rags has fallen off slightly and with the exception of unbleached white cuttings, is rather irregular. Roofing grades are only moderately active. The imported rag market is little changed.

Waste Paper

The better grades of paper stock are fairly well maintained. Demand from the mills for shavings is persistent, especially for white envelope cuttings, ordinary hard white No's. 1 and 2 and soft white No. 1. Book stock continues fairly steady and old kraft is softer.

Twine

Offerings for twine are fairly satisfactory. Several varieties are in particularly good request at present. Keen competition is due to the fact that prices are being held down, although the outlook for the future is fairly promising in the opinion of most observers.

Gaylord, Southern Lumber to Combine

ST. LOUIS, Mo., June 2, 1937—Plans for the merger of Robert Gaylord, Inc., of St. Louis, producer of paper containers, with the Great Southern Lumber Company, which will be voted on by stockholders of both companies Monday, will bring to St. Louis the headquarters of a $12,000,000 combination, including the first completely integrated company in that field with what was described as the largest private reforestation project in the world.

The new company, to be known as the Gaylord Container Corporation, will take over eventually about 560,000 acres of land in Louisiana, the mill and other properties of the Bogalusa Paper Company in that state, and several other projects, which, with the 10 plants in various parts of the country of Robert Gaylord, Inc., and subsidiaries, will give the new company an unbroken chain of operations from cutting of raw timber to distributing the final products of corrugated paper and solid fiber boxes. The Bogalusa Paper Company is now a subsidiary of Great Southern Lumber Company.

Guatemala Buys Her Paper Abroad

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 9, 1937—A steady increase in the consumption of paper of all kinds in Guatemala has been recorded during the past four years, American Commercial Attache Howard H. Tewksbury, Guatemala City, has just reported to the Department of Commerce.

Germany, which has always been a large factor in the paper trade of Guatemala advanced to the dominating position of supplier of paper to this Central American country in 1935. Largely as a result of this competition imports from the United States, particularly in the more important items, have decreased to a very marked degree. The abundance of Askimark credits in Guatemala has been an important factor in this diversion of imports from the United States to Germany, the report states.

The United States still supplies approximately 65 per cent of the total imports into Guatemala of transparent cellulose paper. Germany has been the second large supplier, with Japan next in order, according to the report.

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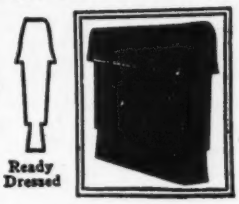

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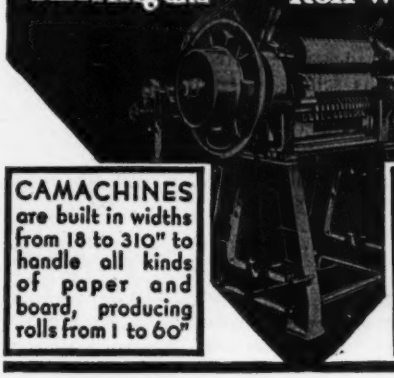

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 9, 1937.

BLANC FIXE—The blanc fixe market continues regular. Prices are generally holding to formerly quoted levels. The pulp is offered at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—Trading in the bleaching powder market is moderately active. The contract movement is normal and prices are generally maintained at formerly quoted levels. Bleaching powder is offered at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market is somewhat steadier. Domestic standard ground casein is now quoted at from 13 @ 14 cents per pound; while domestic finely ground casein is selling at from 13½ @ 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA—Conditions in the caustic soda market are fairly satisfactory. The contract movement is normal. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and ground are selling at from $2.85 to $3 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market is displaying strength. Contract shipments are moving freely. Imported china clay is quoted at from $15 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE—Business in the chlorine market is holding up well and the contract movement is normal for the season. Prices are generally maintained at formerly quoted levels. Chlorine is selling at from $2.15 to $2.25 per 100 pounds, in tank cars, at works.

ROSIN—The rosin market is little changed. Paper making gum rosin is now quoted at $8.15 and wood rosin at $8.20 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $3.68 per 100 pounds, in tank cars, at works.

SALT CAKE—Paper mill demand for salt cake is still persistent. Prices are generally steady. Salt cake is quoted at from $12 to $13; chrome salt cake at from $11 to $12 per ton, at works; while imported salt cake is selling at from $12 to $13 per ton, ship side.

SODA ASH—The soda ash market is moderately active. Demand from the paper mills is fairly insistent. Prices are holding to former levels. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH—While demand for starch is excellent the contract movement to the paper mills is normal. Prices are steady and unchanged. Special paper making starch is now quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHITE OF ALUMINA—The sulphite of alumina market is stronger. Contract shipments are moving in good volume. Commercial grades are quoted at from $1.25 to $1.60; while iron free is selling at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The sulphur market is steady. Yearly contracts are quoted at $18 per long ton on orders of 1,000 tons, or over and $20 on smaller quantities. On spot and nearby car loads the quotations are $21 per ton. All quotations are in car lots, at works.

TALC—Supplies of talc are moving into consumption in moderate volume. Prices are holding to schedule, in most instances. Domestic talc is quoted at from $15 to $18 per ton, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

Tissues—Per Ream—

White No. 1	.95	@	—
White No. 1 M. G.	.92½	@	—
White No. 1½	.67½	@	—
White No. 2	.62½	@	—
Anti-Tarnish M. G.	.75	@	—
Colored	.87½	@	—
Kraft	.75	@	—
Manila	.62½	@	—
Unbleached Toilet	2.60	@	3.30
Bleached Toilet	3.94	@	5.26

Paper Towels—

Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70

Manila—

No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00

Fibre Papers—

No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75

(Delivered New York)

News, per ton—

Roll, contract	42.50	@	—
Sheets	47.50	@	—

Kraft—

No. 1 Northern	5.25	@	5.75
Standard	5.00	@	—
Southern	5.00	@	—
Glazed	4.50	@	—
Striped	4.75	@	—

Boards, per ton—

News	47.50	@50.00
Chip	45.00	@47.50
Sgl. Mla. Lt. Chip	55.00	@60.00
Jute Lined Chip	55.00	@60.00
Kraft Liners	65.00	@67.50
White Pat. Coated	67.50	@70.00
Binders Boards	70.00	@75.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$41.40@$48.50	$42.55@$50.00
100% Rag	32.80@ 38.50	33.95@ 39.75
85% Rag	32.20@ 37.75	
75% Rag	24.75@ 29.00	25.90@ 30.50
65% Rag	21.65@ 26.25	22.80@ 27.75
50% Rag	18.70@ 22.75	19.90@ 24.25
25% Rag	15.80@ 19.25	16.95@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35@$11.50	$10.55@$12.75
No. 2	8.50@ 10.25	9.65@ 11.75
No. 4	7.60@ 9.25	8.80@ 10.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.45	@$14.25
No. 2 Glossy Coated	10.80	@ 12.25
No. 3 Glossy Coated	9.65	@ 11.00
No. 4 Glossy Coated	9.05	@ 10.50
No. 1 Antique (watermarked)	9.05	@ 10.50
No. 2 Offset	8.35	@ 9.50
A Grade E. F.	8.20	@ 9.50
A Grade S. & S. C.	8.45	@ 9.75
B Grade E. F.	7.60	@ 8.75
B Grade S. & S. C.	7.85	@ 9.00
C Grade E. F.	7.30	@ 8.50
C Grade S. & S. C.	7.55	@ 8.75
D Grade E. F.	7.00	@ 8.25
D Grade S. & S. C.	7.25	@ 8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—

Moist	33.00	@36.00
Dry	40.00	@42.00

(Delivered)

No. 1 Domestic and Canadian	33.00	@36.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—

Prime Bleached Sulphite	3.25	@	4.65
Prime Qualities—Easy-Bleaching Sulphite	3.50	@	3.75
Strong Unbleached Sulphite	3.40	@	3.65

(On Dock, Atlantic Ports)

Kraft Bleached	4.00	@	4.50
Kraft Light & Strong	2.75	@	3.75
Kraft No. 1	2.60	@	3.50
Kraft No. 2	2.50	@	2.75

(F.o.b. Pulp Mill)

Kraft Domestic	2.50	@	3.25

(Delivered)

Soda Bleached	3.15	@	—

Add 60 cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—New White, No. 1	9.00	@	9.25
Silesias, No. 1	6.75	@	7.00
New Unbleached	9.25	@	9.50
Blue Overall	7.50	@	8.00
Fancy	3.34	@	4.25
Washables	3.00	@	3.50
Mixed Khaki Cuttings	4.25	@	4.50
O. D. Khaki Cuttings	4.75	@	5.00

Old Rags

White, No. 1—Repacked	3.50	@	3.75
Miscellaneous	3.00	@	3.25
White, No. 2—Repacked	2.50	@	2.75
Miscellaneous	2.00	@	2.25
Thirds and Blues—Repacked	2.00	@	2.25
Miscellaneous	1.90	@	2.00
Roofing Rags—No. 1	Nominal		
No. 2	1.35		1.45
No. 3 (bagging)	1.20	@	1.30
No. 4	1.20	@	1.30
No. 5A	1.05	@	1.10

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.50
New Mixed Cuttings	2.00	@	2.25
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxfords	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00

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No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.50	@	4.00
German Blue Linens	2.50	@	2.75
German Blue Cottons	2.00	@	2.25
Checks and Blues	2.00	@	2.25
Linsey Garments	2.25	@	2.35
Dark Cottons	2.15	@	2.25
Old Shopperies	1.75	@	2.00
New Shopperies	1.75	@	2.00
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.15	@	2.25
Wool Tares, light	1.75	@	1.85
Wool Tares, heavy	2.20	@	2.35
Bright Bagging	1.70	@	1.75
Manila Rope—			
Foreign	5.00	@	5.25
Domestic	5.25	@	5.50
Jute Strings	2.75	@	3.00
Sisal Strings	2.60	@	2.75
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.15	@	3.35
Ordinary Hard White No. 1	2.50	@	2.60
Hard White No. 2	2.40	@	2.50
Soft White No. 1	2.40	@	2.50
Flat Stock—			
Stitchless	1.40	@	1.50
Overissue Mag	1.40	@	1.50
Solid Flat Book	1.30	@	1.45
Crumbled No. 1	1.15	@	1.20
Ledger Stock	1.30	@	1.35
New B. B. Chips	.65	@	.70
Manila—			
New Env. Cut	2.25	@	2.35
New Cuttings	1.90	@	2.10
Old Kraft Machine—			
Compressed bales	1.70	@	1.80
News—			
No. 1 White News	1.50	@	1.60
Strictly Overissue	.90	@	1.00
Strictly Folded	.60	@	.70
No. 1 Mixed Paper	.50	@	.60

Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.16	@	.18½
Belg. White Hemp	.17	@	.20½
India Compress	.16½	@	.17
Fine Polished—			
Fine India	.22	@	.24
Unpolished—			
Box	.11¾	@	.12¾
Paper Makers	.11½	@	.13¾
Tube Rope	.12½	@	.15¼
Wall Paper	.13½	@	.14¼
Wrapping	.17	@	.21
Soft Fiber Rope	.14¾	@	.15¼

(Hard Fibre)

Bond	.13½	@	.22
Anchor	.13	@	.14½
Manila	.21	@	.28
Domestic	4.75	@	5.00
Transmission Rope	2.00	@	2.25
Jute Rope	2.00	@	2.25
Soft Jute Strings	2.00	@	2.50
Jute Carpet Threads	1.75	@	2.00
Gunny No. 1			
Foreign	2.40	@	2.50
Domestic	1.90	@	2.00
Bleachery Burlap	4.00	@	4.25
Scrap Burlap—			
Foreign	2.15	@	2.25
Domestic	1.90	@	2.10
Scrap Sisal	2.60	@	2.75
Scrap Sisal for Shredding	2.75	@	3.00
Wool Tares, heavy	2.40	@	2.60
New Burlap Cuttings	2.45	@	3.00
Aust. wool pouches	3.00	@	3.25
Heavy Baling Bagging	2.40	@	2.60
Paper Mill Bagging	1.75	@	1.80
Bagging No. 2	1.70	@	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04	@	.04¼
New White No. 1	.09	@	.09¾
New White No. 2	.06¾	@	.07
New Light Flannelettes	.07½	@	—
Silesias No. 1	.07¾	@	.08
New Black Silesias	.04½	@	.04½
Soft Unbleached	.09½	@	.09¾
Blue Cheviot	.07½	@	.07¾
Fancy	.03¾	@	.04
Washable	.03	@	.03¼
Kraft, M. F.	6.00	@	—
Cottons—According to grades—			
Blue Overalls	.07½	@	.07¾
New Black, soft	.04¼	@	.04½
Khaki Cuttings	.04¾	@	.05
O. D. Khaki	.05	@	.05¼
Corduroy	.03¼	@	.03½
New Canvas	.07¾	@	.08¼
B.V.D. Cuttings	.08¾	@	.09

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.30	@	1.40
No. 2	1.20	@	1.30
No. 3	1.05	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.65	@	1.75
Dutch Blues	3.00	@	3.15
New Checks and Blues	2.85	@	3.00
Old Fustians	2.50	@	2.75
Old Linsey Garments	2.10	@	2.25
New Silesias	6.50	@	7.00

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	2.00	@	2.10
Domestic No. 2	1.90	@	2.00
Roofing Bagging	1.75	@	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	4.50	@	—
Sisal Rope	3.00	@	—
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	—	@	2.60
No. 2 Hard White	2.20	@	2.25
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.75	@	—
No. 1 Mixed	—	@	.85
Solid Ledger Stock	—	@	1.75
Ledger Stock, white	1.75	@	—
Ledger Stock, colored	1.50	@	—
No. 1 Books, heavy	1.20	@	1.25
Manila Cuttings	1.80	@	1.90
Print Manila	.75	@	.85
Container Manila	.80	@	—
Kraft Paper	1.75	@	—
No. 1 Mixed Paper	.60	@	.65
Straw Board Chip	.50	@	—
Binders Board Chip	.50	@	—
Corrugated Board	.70	@	.80
Overissue News	.75	@	.80
Old Newspapers	.60	@	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ldgers	.85	@	.90
No. 1 Books, heavy	1.10	@	1.20
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Env. Cuttings, extra quality	2.20	@	2.30
No. 1 Old Manila	.95	@	1.00
White Blank News	1.30	@	1.40
No. 1 Kraft	—	@	1.75
Mixed Papers	.45	@	.55
Print Manila	.75	@	.85
Container Manilas	.27½	@	—
Old Newspapers	.50	@	.55
Overissue News	.50	@	.65
Box Board Chips	.55	@	.60
Corrugated Boxes	.77½	@	.82½
Kraft corrugated boxes	—	@	1.60
Screening Wrappers	.60	@	.65

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	4.25	@	4.40

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	3.30	@	3.40
No. 1 Hard White	2.60	@	2.70
No. 1 Soft White	2.10	@	2.15
Ledger & Writings	1.40	@	1.50
Solid Books	1.25	@	1.30
Blanks	1.50	@	1.65
Krafts	1.00	@	1.25
New Kraft Cuts	1.80	@	2.00
Manila Env. Cuts	2.20	@	2.35
Ex. No. 1 Manila	2.20	@	2.35
Print Manila	1.70	@	1.80
Overissue News	.80	@	.90
Old Newspapers—			
No. 1 Folded News	.80	@	.90
No. 1 Mixed Paper	.80	@	.90
Roofing Stocks—			
No. 1	2.00	@	2.25
No. 2	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	.15	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White	.11.35	@	—
No. 5 Bond—Tints	.12.35	@	—
No. 5 Bond—Golden Rod	13.35	@	—
No. 5 Ledger—White	.11½	@	—
No. 5 Ledger—Tints	.12	@	—
No. 6 Bond—White	.10.75	@	—
No. 6 Bond—Tints	.11.25	@	—
No. 6 Bond—Golden Rod	12.75	@	—
No. 7 Bond—White	9.10	@	—
No. 7 Bond—Tints	9.70	@	—
No. 7 Bond—Golden Rod	11.20	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.20
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.00	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.00	@	—
No. 3 Coated and Litho	9.50	@	10.00
Coated tinted	13.00	@	13.50
Wrapping—delivered—			
Rag Brown	4.85	@	5.55
White Wrap	4.00	@	—
"B" Manila	4.90	@	6.25
No. 1 Manila	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2	5.50	@	—

(F. o. b. Cars, Toronto)

News, per ton—			
Rolls (contract)	38.50	@	—
Sheets	45.50	@	—

Pulp

Ground wood	30.00	@	31.00
Unbleached Sulphite	52.00	@	53.00
Book (Class 1)	65.00	@	66.00
Writing (Class 2)	66.00	@	67.00
Select (Class 3)	67.00	@	68.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.15	@	—
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.70	@	—
Kraft	1.00	@	1.70
News and Scrap—			
Strictly Overissue	.75	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09	@	.09¼
Fancy Shirt Cuttings	.03¼	@	.04